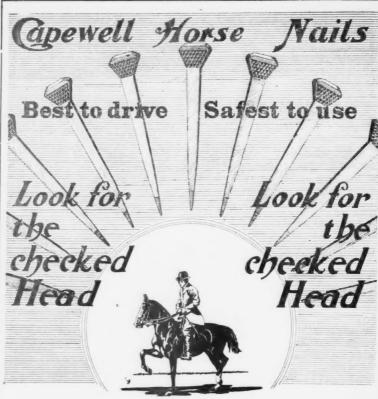
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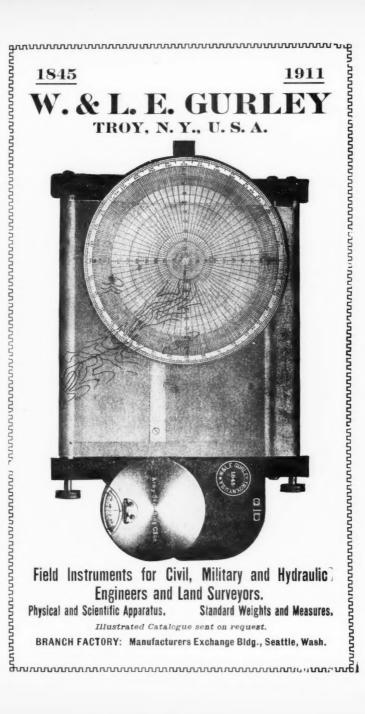


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THE REORGANIZATION OF THE CAVALRY.

BY MAJOR GENERAL GEORGE B. DAVIS, U. S. ARMY.

I HAVE read with great interest the able and thoughtful papers on the Reorganization of the Cavalry in the September number of the Journal: after some reflection and a somewhat casual study of the views so strongly and lucidly presented, it seemed to me that, out of my service and experience as an officer of the regular and volunteer cavalry, I might possibly be able to throw some light upon the subject, even though a portion of that servicee was rendered nearly half a century ago.

Very great weight is attributed, by nearly all of the participants in the discussion, to their presence with their commands of the maximum number of enlisted men allowed by law. This proposition is so fundamental as to lie quite outside the scope of ordinary discussion; it is equally true that this form of absenteeism, less frequent, perhaps, in the volunteer, than in the regular cavalry, constitutes, always and everywhere, a menace that should be promptly abated. I am sure that there is but one opinion in this matter, but the remedy fortunately is administrative and within the authority of every post commander to apply; moreover the situation is one which,

however serious, calls for no measure of legislative relief. Those whose good fortune it was to serve under the late General Merritt will remember how satisfactory that service was in this particular regard. Each troop at drill carried its full strength, less the guard and say three or four men in the kitchen stables and quarters; as these men were changed at stated intervals, usually once a week, their military instruction did not suffer, and the company commander felt that he was drilling—not a set of regulation samples but a sure enough troop of cavalry. With this the matter of full troops, in time of peace, may, for the time, be dismissed from further consideration.

The corresponding diminuation of effectives in time of war is a subject less easy to dispose of. The contributors to the discussion in the September number, almost without exception, speak of the serious consequences of the reduction in strength and efficiency of a cavalry command when on a war footing due, for the most part, to the absence of men due to the fact that they are dismounted. Losses of men in war are due to two principal causes: (a) sickness and wounds; and (b) the loss of horses due to overwork, underfeeding and in a less degree, to other casualties of war. Now the reductions in effective strength attributable to wounds and disease are, as a rule, not very serious. I can conceive of an exceptional case in which a cavalry command in security operations, or in an unfortunate encounter with infantry, may be badly handled by the enemy to such an extent as to involve severe and unusual losses. But these occasions are by no means frequent and, in the ordinary employment of cavalry the lists of killed and wounded are not alarmingly long.

Not so, however, with the steady loss of horses, day by day, due to a number of causes, some of which will be made the subject of a somewhat brief and perhaps inconclusive discussion. The serious character of the situation is due to the fact that with each horse that falls out of ranks, or otherwise perishes by the wayside, there goes an able bodied rider, whose loss though possibly temporary, is none the less serious for the man is seasoned to war, reasonably well trained, immune to most of the maladies of camp, and willing to render service, but prevented from doing so by the loss of his mount. It was

not by any means an unusual circumstance in the Cavalry Corps of the Army of the Potomac for regiments to lose from five to fifty men a day after the campaign has been under way for a month or more. I have myself seen the color squadron of my regiment reduced to nine enlisted men. four of whom formed the regimental color guard. This case is unusual and the loss of horses was excessive, but could not have been avoided in view of the service in which the Cavalry Corps was engaged, at about the midsummer of 1864, and it was approximated upon more than one occasion in that and other commands. The horses simply "played out" and disappeared from view, no further notice being taken of them; the men gradually drifted into the dismounted camp at Giesboro, opposite the city of Washington where they remounted, re-equipped with saddlery, and in the fullness of time, rejoined their commands in the Valley of Virginia. The dismounting of the rider also marks the instant when the Government finds it necessary to "charge off" to profit and loss (generally the latter) a very considerable investment in saddlery and equipment which "went with the horse," and which the rider in the absence of any means of transportation, was compelled to abandon.

The mechanism of this incident of becoming dismounted is interesting and for that reason is worthy of a moments con-The greatest losses occur at a time when it is most sideration. seriously felt and at a time when it is most difficult to apply a remedy; that is on a "raid", or in the prosecution of an independent operation in which the mounted command is, for a considerable period of time beyond the support of the other arms. In such a case there is no "rear" in the ordinary sense of that term, to which the dismounted men can be directed; they are therefore compelled to follow the rapidly marching column, keeping in such touch with it as they can; in this they are stimulated, to some extent by the advance of the enemy. In their helpless, disorganized condition they are not availbale for duty of any kind save, perhaps, as wagon guards when ammunition and supply trains accompany the column.

The losses to which I have alluded, and which seem to be inevitable in time of war, are due to several causes; overwork, insufficient feeding, bad horsemanship, and an original want of fitness for hard work as saddle animals; these will be discussed in order. In the operations of a large army, composed of troops of all arms, it is by no means an easy matter to furnish a constant and regular supply, even of food, to the army generally. It is much more difficult to furnish a living ration to the public animals—especially the cavalry horses. Systematic efforts are put forth to get a forage ration to the front and, during the greater part of the time, from eight to twelve pounds of grain are forthcoming, with occasional barren intervals, when, for several days at a stretch the poor cavalry mounts go breakfastless to work and supperless to bed. In horsefeeding irregularity is fatal and when irregularities become so frequent that the horse gets nothing, or next to nothing to eat, things are nearing their inevitable end.

The supply of short forage is even more uncertain during the period of active operations, especially when we consider the amount of work which is required of a mounted command under war conditions; the question of furnishing long forage under the same conditions is still more unsatisfactory. In winter quarters and during halts for refitting and recuperation the fourteen pound allowance of hay is generally forthcoming but, so soon as the command cut loose for an independent operation, the hav supply instantly ceases. It will be said that the deficiency should be made up by grazing. That is an an easy question to ask and not a particularly difficult one to answer. The horses furnished for remount service in the Army of the Potomac were, as a rule, stable fed, and regularly fed, but quite unused to grazing. They had been destined from birth and even before birth, along several lines of wagon hauling forbears to team use, many of them had never been backed, even by a boy for the purpose of being ridden to water. For such a life regular habits, with rather heavy feeding from a manger three times a day with plenty of bedding were regarded as essential. While it is true that some of the horses so brought forth might become useful saddle animals, and it is surprising how many Northern bought horses did actually become good cavalry horses, in spite of their unpromising antecedents, the fact remains that grazing, free exercise in the pasture and the

moderate use of grain were not the daily incidents of their upbringing. The inevitable result was that the new mounts, when they reached the front, were soft, flabby, tender on their feet, often too heavy, and, more frequently than not, too sluggish and unweildy for saddle purposes, cursed with tender backs which were soon to become the seat of galls, blisters and saddle boils; all this led to one end, the horse subjected to hard field service succumbed to the inevitable; he became too weak for the work required of him, his blistered back could no longer support the weight of a saddle, his legs simply ceased to work and he fell out of the column to return no more.

Grazing during the progress of active operations is far from being an easy practicable method of feeding than would seem reasonable to an officer who is only familiar with the frontier service of the cavalry arm, and whose early service was rendered in the region of the bunch and buffalo grasses on our western frontier. If Indian hostilities were on, it was always safe to do some grazing during the day and, in addition, to allow a portion of the heard to graze during a considerable part of the night. The Indian was a wary and resourceful enemy, always on the alert, and only ready to take advantage of any slip in the herding arrangements of his pursuers. But he was generally on the run and it was only upon rare and specially favorable occasions that he felt it safe to try and do something with the herds.

In the operations much larger and less homogeneous commands during the progress of the Civil War, the grazing situation was not always, or altogether controlled by regimental, or other subordinate commanders. The enemy encompassed him about at all times when an independent operation was in progress—that is when the cavalry command was working at some distance from, and unsupported by the infantry of the main body. These operations had an immediate and important object and purpose—the troops were out to harass and defeat the enemy—not to establish a convalescent camp for decayed and overworked horses, or to get for them the moderate advantages that ensue upon moderate walking exercise between meals. The command was likely to attack, or to be attacked

at any instant, and no mounted command is less fitted for instance employment than one in which the horses were grazing possibly a mile or more from the camp of the main body. They could be and sometimes were grazed in a way by removing the bits as the horses stood in regimental lines; this was beneficial as far as it went, at times it was the only resource in the way of food that was available, but it was not a substitute for grain, or even for grazing in the sense in which that term is used on the frontier; and such casual and uncertain feeding was no more grazing than it would be for a wheel mule to eat up the wagon master's hat.

I have attempted to give some idea of the predicament in which many mounted commands in the Eastern armies found themselves during the progress of the Civil War: and I am certain that the substantial incidents of the active service of cavalry have not materially changed since the volunteer cavalry regiments were mustered out nearly half a century ago. I will now attempt to show what was done in the direction of applying a remedy in the Cavalry Corps of the Army of the Potomac, an organization with which I was fairly familiar. In the early days, before General Hooker was permitted to see dead cavalrymen in any considerable numbers. the effort was made to apply to the cavalry arm something resembling the admirable organization extablished by the late General Henry J. Hunt for the artillery of that army. General Pleasanton a cavalry officer of considerable ability was appointed chief of cavalry. This did not mean that he was its commander, although he afterwards became so, nor was he restricted to the duty of advising the commander of the army, for he occasionally exercised the functions of active command. His name will be longest remembered for having worked out, in opposition to the Confederate General Stuart, the modern "screening system" of employing cavalry in campaign. Perhaps the credit of this is due in about equal parts to Pleasanton and Stuart with a reasonable share of the credit to Colonel Mosby, the tireless searcher for information whose brilliant opeartions the Union armies were never permitted, for a moment, to forget.

Dismounted cavalrymen were numerous in 1863 and still more during the energetic command of General Sheridan in the following year. The dismounted men drifted back to the rear and, as convenient opportunities presented, were sent to the remount camp at Giesboro, Md., where a separate encampment was established for each brigade of the Cavalry Corps. In each of these brigade cantonments provision was made for each of the regiments composing the brigade. These brigade camps were commanded by field officers, most of whom had been disabled by wounds in the performance of active duty. At Giesboro Point, a short distance away, were the great horse and mule corrals where the horses purchased for the remount service were received and almost immediately issued to the remount camps. In the brief period of their sojourn at the Giesboro establishment the raw mounts were equipped, given such training as time permitted and, when a detachment of reasonable size had been accumulated, were put cn route to rejoin their commands at the front; several thousand dismounted men passed through the camp in 1863 and a considerably larger number in 1864.

The arrangement which I have attempted to describe was fairly successful in its operation and, considering the time, would seem to be worthy of future consideration. So long as horses give out in the active operations of war, from causes whose existence is known, and which we may or may not be able to foresee and provide against, the question of remounts will be one of the very first importance, upon which the success of the mounted branch of the military establishment, in any war upon which we are likely to be engaged, will certainly depend.

I may be permitted, perhaps, to say a word in respect to reorganization, premising what I have to say with the remark that our regimental organization was conceded from the first to be an unusually large one, without a model in any regiment then existing in any European army. The cause is not far to seek. In 1833 when the First regiment of Cavalry was organized, a mounted force was sorely needed to protect the wave of emigration, which had then passed the Mississippi River. Save to authorize the addition of a regiment of dragoons to

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the establishment, Congress gave the matter no further legislative concern, leaving the details of organization to the executive discretion. As it was not easy to secure legislation adding to the organizations composing the army, or increasing its numerical strength, full advantage was taken of the occasion with a view to get as large a regiment as possible, and with little regard to the strength or composition of similar regiments in Europe. Such briefly stated is the reason why cavalry regiments in the United States Army have been what they are. Our cavalry officers gradually became accustomed to the large regiments and, as they became reduced from twelve hundred men to something like six hundred as men were dismounted in the course of active campaign, the regiment was found to be more manageable, and there was a feeling that the men and horses who remained with the colors were in some way better and more reliable than those who had become dismounted: a proposition not without a basis of truth. Progressive officers thus gradually became satisfied with the larger unit of organization. In the changes which are now suggested I do not glean from the discussion that the advantages of the new arrangement are more than comparative, or involve serious dissatisfaction with the existing organization. We would like something better, much more in harmony with the changed condition, but, if we cannot get it we will cleave what we have.

It is unquestionably true that a twelve company regiment is too large to be handled efficiently by one commander, especially if he regards the command as a single unit, and not as an organization composed of three constituent units. It must be borne in mind, also, that though the troops with the colors are reduced in number by the emergencies of an active campaign, the missing men are very much alive and, sooner or later, will return to duty at the front. The twelve-company regiment is clearly too large, especially on a war footing, and the movement in favor of smaller and more easily handled regiments is one that makes for economy and efficiency. I find much to be said in favor of the idea of the depot company, an instrumentality of which we have long stood in need, and which will contribute materially to the efficiency of the cavalry service. The need of such an agency is so obvious, and its

utilities are so numerous, that I am unable to see why it has not been suggested before.

The ten troop proposition (one to be a depot company) with, I believe a machine gun detachment has much to commend it: more than this it is an evolution out of our conditions and service needs. That it does, or does not conform to current European practice is a matter of absolutely no importance. The progress made by our cavalry, not only in its daily service, but in the solution of problems of the greatest importance in the tactical employment of that arm, has not been surpassed or even approached by that of any European army. Why follow them then in matters in respect to which we have the right to set the pace. If the regiment should be increased, increase it: if it ought to be reduced then reduce it, but in adding or reducing let us look to our own experience and our own tactical and administrative needs and not to those of European armies. for there is no common ground upon which both can safely or reasonably stand.

SINGLE OR DOUBLE RANK FOR CAVALRY.

BY BRIGADIER GENERAL F. K. WARD, U. S. ARMY.

DURING the discussion which has been going on for some time about re-organization of our cavalry, the statement has been made that it might be found advisable to return to a double rank movement system. Before making such a radical change the matter should be well considered from every point of view. We had a double rank system many years ago and changed to a single rank system. The latter is the simpler and easier of the two, especially for the men in the ranks. But effectiveness is of course the first consideration and I think it was on that ground that the suggestion for a return to a double rank system was based. I believe that greater effectiveness can be attained with a single than with a double rank system. A single rank movement system does not mean necessarily a single rank line of battle.

The question is one that can be positively settled only on the battlefield. The final test is there and the requirements there are of the first importance, are paramount to everything else. But we cannot have the question settled there. Battles are few and far between. And for a conclusive decision as to the relative merits of two systems, all other things must be equal with the opposing forces, a condition that will seldom or never obtain in battle. All that we can do, therefore, is to study the question, endeavoring to overlook nothing, and take our chances on the correctness of our judgment resulting from that study. All thegreat powers in Europe, I believe, hold to a double rank system. That is a practical expression of a judgment based on long experience in large armies where they have more cavalry and consequently more opportunities for trial than we have. Such a judgment commands our respect an we should be very cautious in rejecting it. But it would be a mistake to accept it as infallible: By so doing we bar all progress, all improvement.

We hear a great deal about the days of cavalry on the battlefield being all past. Such statements result from an incomplete view of the matter But whether they are or are not true as regared the general battlefiield is of no consequence in our present inquiry. A heavy line of cavalry is never needed for action mounted against foot troops or artillery: Open order is more effective: Successive lines in open order may be, doubtless are needed, but never two or even one rank in close order. It is not to action against foot troops or artillery that we should go for light in our present inquiry. Large armies will always have out bodies of cavalry sometimes as large as a division for purposes of security and information, and there will be engagements between these cavalry forces which, by reason of their importance and the numbers engaged, may properly be called battles. In these battles occasions will occur when recourse must be had to action mounted against an opponent also mounted.

For action mounted by cavalry against cavalry mounted, a line of battle in c ose order is needed and one rank does not make a heavy enough line. A careful consideration of this action is necessary to a correct decision as to whether or not we should return to a double rank movement system. And in this consideration the opposing forces must be considered equal in numbers, equally well instructed, equal man for man and horse for horse. The relative merits of the two systems cannot be judged on any other basis.

To place the matter clearly before the mind it will be well to consider three cases:

- 1. A single rank against a single rank.
- 2. A single rank against a double rank.
- 3. A double rank against a line composed of two or more ranks

And it must be assumed that in each of these cases the actual collision, the shock, will take place. We sometimes hear it said that the actual shock will never take place; that one of the lines will give way before that point is reached. Any cavalry which starts out with that belief might about as well stay at home; it can accomplish very little. It will go

into action beaten before it gets on the field and any commander who relies upon it for security and information will be leaning upon a broken reed.

The first case, that of a single rank against a single rank, needs but a few words. The two lines are equal in numbers and weight and the final result must be in favor of that side which makes the most efficient use of its supports and reserves.

The second case, a single rank against a double rank, calls for more careful consideration although there can be little doubt as to the final result. The immediate result of the collision of the two lines is the important thing to consider in this case. If neither line had a rear rank, the immediate result of the collision would be that both lines would be brought to a halt, the two lines intermingled and many horses down in each line, for the two lines are equal horse for horse and the instruction being equal the charge will be equally well delivered by each side. Now what effect will the rear rank of the one side have on this result? It can add nothing to the momentum of its front rank at the instant of the collision for it will be two yards behind it at that instant. Previous to the shock some of the rear rank men may move up into the front rank to fill openings occurring there but with well instructed men there will be no occasion for that at very many points. A single rank fairly well closed makes a formidable obstacle. It cannot be cleared or pushed aside. It may be knocked down but the horses doing it will have little or no go left in them for a while, even those that are not down themselves. There seems no ground for any other conclusion than this. While the single rank line may be pierced in some places by individual men or at most by a few individuals, the two lines will be brought to a halt and that immediately after the collision the men remaining in the rear rank, being too close to avoid doing so, must plunge headlong into the mass with more immediate damage to friend than foe. However, the double rank force outnumbers the other two to one and must be victoroius in the melee following the shock. To be sure the single rank force with an equal front will be able to have the greater strength in its supports and reserves, but they will not be where they are needed at the time they are needed which will

be immediately after the shock and throughout the line all at the same instant. It may even have a greater front and still have more men than the other side in its supports and reserves, in which case its unopposed flanks could come round in a flank and rear attack. But even then it seems hardly likely to be successful. Its lines are too light.

Whether or not the two lines will brought to a halt by the shock in such a case as this needs most careful consideration. Right there is the cruz of the whole matter and, as will be evident when we come to a consideration of the next case, there hangs the decision as to whether or not we should go back to a double rank or hold to a single rank movement system.

We now come to our third and last case, that of a double rank against a line composed of two or more ranks. But first it is necessary to make clear what is meant by a two rank line as distinguished from a double rank. Speaking by our present drill regulations, suppose every troop, regardless of its strength to be divided into two platoons only and that a line of platoon columns with closed intervals is formed. We then have exactly what is meant by the term a two rank line. The two lines would ordinarily be separated by platoon distance and they are separately organized and officered though not as separate lines. With full troops divided as required by our drill regulations, a line of platoon columns is a four rank line.

Let us consider first a double rank against a two rank line. In this case we may take it that the supports and reserves are equal in numbers and that they will be equally well handled. They may properly be excluded from consideration. They pair each other so to speak. The final result will be determined by the two lines alone. Throughout the advance to the attack, the rear rank of the double rank line must keep closed to the prescribed distance of two or three yards. On the other side when the rapid gait is taken up during the advance, the platoon commanders in the second rank should take, each from his leading platoon, such a distance (say about seventy or seventy-five yards) that when the shock takes place they can halt their platoons just short of the engaged mass. They would then get there before the disentanglement is completed,

in perfect order, and in condition to take the most effective part possible in the melee to follow. Now compare the condition in the two opposing forces. In the double rank line the entire force is in complete disorder with many horses down. On the other side the condition is just as bad in one, but the other rank, one half the total force is in perfect order and condition. Can there be any doubt as to the result? It certainly looks as if success must rest with the two rank line; as if that were the stronger line of battle.

The adoption of a two rank line of battle would not amount to a sending in of the first rank as a sort of forlorn hope to bear the brunt of the action. The leading rank would really go into the shock in better plight than the front rank of the other side. It would be relieved of all thought of its rear rank plunging in on top of it and would know that its second rank, uninjured by the shock, would be on the ground to its assistance just when needed. And if proper practice has been given in the drill ground to the march in line at rapid gaits in the squadron and the regiment, a force will go into the shock in well defined lines; not in a confused mass, not with one rank occupying a depth of ten or fifteen yards.

Now as to a double rank against a three or four rank line. The supports and reserves cannot be excluded fron consideration in this case and we must remember that the aggregates of the opposing forces are equal. Suppose the commander of the double rank force puts half his strength in his attacking line and the other half in his supports and reserves, a division at least as likely as any other. Now if the other commander decides for a four rank attacking line with a front equal to that of his opponent he must dispense entirely with supports and reserves. By so doing he would leave his flanks and rear unprotected and expose himself to almost certain defeat. If he puts half his strength in support and reserve, his four rank attacking line will have but half the front of that of his opponent whose overlapping flanks will be free to whip around in a flank and rear attack, since the supports and reserves of the two sides are again equal and must be considered as balancing each other. And the effect of flank and rear attacks is out of all proportion to the strength of the forces making them. By

a similar course of reasoning it would appear that any division of the available force into an attacking line, supports and reserves, with a four or a three rank formation, would give less probability of success than with either a double rank or a two rank formation. With three ranks the defects would be the same in kind though less in degree perhaps.

For hundreds of years there has been going on a reduction in the number of ranks in formations for combat. By universal judgment the reduction seems to have stopped at two ranks. More than two ranks gives rise to several defects or difficulties. One of them has already been referred to, the liability to flank and rear attacks. Another is that with many ranks a part of the force is blanketed, cannot get any part in the combat at a critical time. In a line of any considerable length the men in rear cannot spread out for that puropse and for a time can only stand back and look on. Doubtless that obtains very little with three ranks but with four or more it must be perceptible. The strength required for more than a double rank or for more than two ranks, can be more effective in the support and reserve. Another objection to a deeper line than is necessary is that if fire action is encountered there are unnecessary casualties, a waste of strength and of life.

Practically, at the present time, we have but one question before us: Which is the stronger, a double rank or a two rank line such as described? If the latter is the stronger we do not want a double rank movement system for that does not lend itself to the formatoin of a two rank line. A single rank system does and that alone is a sufficient reason for holding to such a system. To make our present drill regulations serve the purpose it would only be necessary to make one or two changes namely: Prescribe that a troop, regardless of its strength, shall always be divided into two platoons, and only two; and that the two rank line shall be the habitual line formation for the troop, the squadron, and the regiment.

For open order purposes and for dispositions for dismounted action, a single rank movement system will be found in no respect inferior to a double rank system and in some important respects I believe it is a superior. The rally could be executed quicker and in better order in two ranks than in a

double rank. The men would never forget which platoon they belonged in and the two platoons could be formed simultaneously in the usual and proper position with reference to each other and without interference among the men in getting into ranks. When in open order in line of squads or line of platoons, a double rank formation would never be wanted in the squads or in the platoons. It is not necessary to multiply examples.

The preceeding short discussion is not one of drill regulations merely. It is one of cavalry tactics pure and simple, of the tactics for a most important time, for the battlefield. The conclusion stated are merely an expression of my own individual belief. If enough has been said to direct attention to the subject, cause it to be thoroughly studied and a correct decision to be reached regardless it, my object will be com-

pletely accomplished.

This inquiry is about one of the two most important tactical measures. Essentially it is with regard to the best formation to be assumed for the attack. The other measure to which I refer is with regard to the best method for delivering the blow after the formation has been completed. In the CAVALRY JOURNAL for March, 1899, Volume 12, page 50, there appeared an article by me on the last named subject under the title "Guide Center and Leading." The best tactics for the two purposes named or the summit, the crown of all cavalry tactics. The adoption of bad tactics for those purposes might, very likely would, render abortive all previous tactics however good they may have been. In making this reference I repeat what I said just above, that my only object is to direct attention to the subject with a view to its receiving the attenion its importance makes due.

A few words here on cavalry organization will not be out of place. Tactics and organization are very closely related and the size of the first or base unit, the troop we call it now,

is a very important matter.

In moving mounted troops in line it is absolutely necessary to divide the line into sections with intervals of a few yards between sections to allow for the unavoidable irregularities in marching. These sections should be no smaller than

is necessary to accomplish their purpose, this in order not to weaken the line unnecessarily. By our drill regulations a troop in single rank, if of the maximum strength, has a front of ninety-seven. I do not believe that many mounted men, no matter how well instructed, could move in line in one rank at a rapid gait and preserve good order. The experience in large armies seems to be in confirmation of that belief. About 1890 the drill book in use in the English Army gave sixty-four as the maximum front for a squadron which in their system corresponds exactly to the troops in ours. As theirs was a double rank system, that fixed the maximum strength of their squadron at somewhere from one hundred and forty to one hundred and fifty enlisted, allowing for the file closer and those men who never turned out in ranks. I have never heard of larger squadrons than that in any service. These facts indicate that their experience fixes the maximum front possible for the base unit at about sixty-four, that being taken as the exact figure probably because with that number the subdivisions necessary for tactical purposes work out best.

From what has just been said it follows that if we are going to adopt a single rank line of battle, our troop is too large. But it is hardly possible that any one will advocate a single rank. For a two rank or a double rank line tactics very clearly and definitely fixes the maximum strength for the base unit at from one hundred and forty to one hundred and fifty enlisted It so happens that this is also a good size for the smallest administrative unit: but if it were not, the tactical requirement would still have to govern.

The base tactical unit was formerly called a squadron and I believe that is still the name used in all armies but ours. The troop was originally an administrative and not a tactical unit If we again make our base unit of the same size as in other armies, we should again designate it a squadron. That would be the means of avoiding considerable uncertainty and confusion under circumstances that may arise.

CAVALRY ORGANIZATION.*

BY MAJOR HENRY T. ALLEN, GENERAL STAFF, U. S. ARMY.

THE article, Cavalry Organization, in the January 1912, number of the CAVALRY JOURNAL by Lieut. Col. Dickman merits more than usual attention by reason of the zeal and deep interest shown therein.

1. The writer seems to follow in the footsteps of various others in treating the squadron of other countries as analogous to our squadron. The word squadron has its basic idea a square and dates from the time when hollow squares were in vogue. The four sides of the square were the four platoons of the squadron and the commander thereof was then as now captain.

Other countries have no squadrons in the sense in which we use the word. Our troop with its three to four platoons commanded by a captain is a squadron in the sense in which that term is used in other countries. The word troop is an unfortunate designation for cavalry purposes and was borrowed by us from the English who translated the words *peleton* and *zug* by troop. It is believed that we have already correctly translated those words by platoon.

2. "The tables cited do not show that our regiment is too strong numerically to be handled by one man." The assertion to which the writer refers was that our present regiment brought up to Field Service Regulation strength and kept in single rank was too large to be properly handled by one man as a regimental entity. That conclusion is sound. It is believed that the strength provided in Field Service Regulations leaves the troops too small for an economical administration both as regards men detached from the combatant force and as regards the purely financial phase of the question.

^{*} Pages 609 and 610 of the January, 1912, CAVALRY JOURNAL.

If the writer proposes to have our squadron (battalion) considered as a European squadron (troop), then its extravagance becomes more marked. If a troop be as large as a captain can properly command then for mobility, convenience, and cover, it should be in double rank. It is not "feasible to put 700 American horses on the same ground occupied by an equal number of European chargers." When the former are maneuvered in single rank with squadron intervals and distances and the later are maneuvered in double rank without the squadron distances and intervals.

- 4. "The tendency in a charge is to loss of cohesion" and therefore the double rank has been recognized by practically all cavalry experts as the proper formation for shock. The various elements, whether they be in platoon or troop fronts (and in large commands in regimental fronts) would furnish the successive shock elements. If we had no larger commands than regiments it would be advisable to consider the second line after the manner of a brigade formation. Experience has clearly demonstrated that the compact organization is preeminently fit for speedily seizing and holding important positions, and for finding cover while awaiting an opportune moment for attack.
- 5. The writer states: "In the European squadron, we find, as a general rule, one officer to twenty-five to thirty men; in the American squadron, one officer to seventeen to eighteen men. From this it is evident that if our authorized 13,110 enlisted men of cavalry were to be organized according to the Austrian, German or Russian models, here would be a large reduction in the total number of officers required. Such reduction, or an increase in the cavalry without promotion of officers, would hardly have a good effect on the spirit of the arm."

Nowhere within the knowledge of the writer of this comment has there been any intent or desire to effect an organization that entails a reduction of officers. (See pp. 26–27 Cavarly Notes.) Certainly the War Department has not considered such a measure nor is it believed that Congress has contemplated that phase of the question. The proportion of

cavalry under the 100,000 army statutory limitation rests with the President. This arm was recently increased by adding five men for each troop for the United States proper and ten men per troop for the insular holdings—a total of 1,200 troopers.

6. In the organization outlined in Cavalry Notes, only a general idea was to be conveyed of a modern organization. The size of the troops and the number were not set down as conclusive. Under the proposed organization it was intended that sufficient enlisted strength be provided to meet the requirements of the officer personnel now existing. The additional increment of troopers would not be great and the savings in construction of buildings, streets, sewers, heat and lighting would be enormous. At recent inspection of several cavalry posts the maximum strength that was turned out for experimental drills was 66 per cent. That fact alone must be suggestive as to the policy of numerous small units to the regiments.

Experiments with a brigade will clear up a number of points that are now obscured by our almost general limitation to be a single regiment as the largest unit.

ONE LIST FOR LINE OFFICERS.

BY LIEUTENANT COLONEL E. R. STUART, PROFESSOR U. S. M. A.

NDER this caption in the November issue of the Cav-ALRY JOURNAL are to be found certain statements which at least may be considered open to discussion. The following are quoted:

"The officers of these special services (Staff and Coast Artillery) are working and thinking continually along a special line. In times their ideas get a permanent bent in that direction and they can see or care for nothing else.

"Yet an engineer always looks for a chance to use his special trade. In a war game or maneuver an engineer officer who has been given an offensive mission and ample means to carry it out will nevertheless usually promptly begin to look for 'a position.' In other words his previous training as an engineer in the construction of field fortifications has given his mind a permanent bent that usually unfits him for the command of a mobile force."

It is suggested that the whole of the paragraph on page 559 of that number be read.

Whose is the Napoleonic gift to decide what is an offensive mission? Unless specifically confined by orders, a commander is given a mission to carry out according to his own best judgment, and merely because the author of the article in question has differed from some engineer officer as to whether in certain circumstances the best plan was to act on the offensive or on the defensive, he should not issue an ukase condemning Lee, Meade, McPherson, Wright, Humphreys, and many other illustrious officers as unfit "for the command of a mobile force." Inferentially, the writer condemns "looking for a position." Has any battle been fought in which one force was not in "a position," selected with a view to taking advantage of a clear field of fire, secure flanks, screened maneuvering space, and as many as possible of the other advantageous features of the defensive? If so, it will serve as an example of what not to do in war.

A careful study of a possible theater of operations will serve to show what are the positions facing in your direction in one of which the enemy is sure to be found if you act on the aggressive, and what are the advantageous positions facing in the direction of the enemy, in one of which you will elect to fight if the enemy is able through any combination of circumstances to force you to act on the defensive. Nothing is more illuminating than the study of these positions, and nothing will serve so accurately to forecast the trend of events. Whatever the theory applicable to the case, the tide of battle will sometimes turn against the force operating on the offensive, and a commander who at that critical stage has first to turn to a study of "a position" has taken a frightful liberty with the organization which is unfortunate enough to be commanded by him. Lee was not above "looking for positions" but it is to be remembered that Lee, being an engineer officer, was not "fit for the command of a mobile force."

Quoting now from Pope's well known address to his army:

"I have come to you from the West, where we have always seen the backs of our enemies; from an army whose business it has been to seek the adversary and to beat him when he was found; whose policy has been attack and not defense.

"Meantime I desire you to dismiss from your minds certain phrases, which I am sorry to find so much in vogue amongst you. I hear constantly of 'taking strong positions and holding them,' of 'lines of retreat,' and of 'bases of supplies.' Let us discard such ideas. The strongest position a soldier should desire to occupy is one from which he can most easily advance against the enemy. * * * W. R. 18. p. 473.

Brave words these and coming from an engineer officer should be particularly appreciated by the writer of the above mentioned article, but they serve to show that the offensive cannot be maintained through the use of the pen alone. Nor in war can the date of a battle be predicted by dividing the total distance separating hostile forces by double the daily march of infantry.

No one will deny that the defensive has disadvantages, but on the whole the advantages outweigh the disadvantages, as is proven by the fact that an inferior force can maintain front against a considerable preponderance of strength by a skillful utilization of the advantages of the defensive against an equally skillful utilization by the stronger force of the advantages of the offensive. It is true that the defensive cannot lead to decisive results, but it is also true that the inferior force is not entitled to expect decisive results in its favor. A lightweight pitted against a heavyweight is lucky if he escapes a knockout, which he is more likely to do if he doesn't undertake to rush matters.

All of which goes to show that the defensive has its proper sphere in war, and there are times when a commander or sub-ordinate is justified in acting on the defensive. The decisive results attending the offensive apply only to a force as a whole. Success by aggressive action of a fraction of a force is only partial at best, and may expose the aggressive fraction to disastrous defeat. Offensive missions for fractional parts of a force should be viewed with suspicion.

To sum up, the really valuable commander is he who has no deleterious "permanent bents" either for the offensive or defensive, but is capable of unbiased judgment resting upon a correct appreciation of the role of engineering as well as all other auxiliary arms, and having reached such judgment, capable of acting upon it either boldly on the offensive or conservatively on the defensive, as circumstances warrant. Of these the Engineer Corps has furnished its full share, just as it has furnished Pope with his "strongest position a soldier should desire to occupy is one from which he can most easily advance against the enemy," and McClellan of whose shortcomings that seemed like timidity the writer complains.

Relative to McClellan, let us remember that the nucleus of the army he organized had been with McDowell at Manassas on an "offensive mission with ample means to carry it out;" let us study his strength reports and find out how long his men had been with the colors; and let us remember the conditions of manufacturing at that time and the probable chaotic condition of his supply arrangements. Then perhaps we may not judge too harshly his lack of aggressiveness, even though we may not forgive all his shortcomings as a commander in the Peninsular Campaign. McClellan did not lead his army to victory. Somebody else might have led it to disastrous defeat.

GRANT'S MOVEMENTS ACROSS THE JAMES.

BY CAPTAIN GEO. VAN HORN MOSELEY, GENERAL STAFF, U. S. ARMY.

GRANT'S Overland Campaign with the Army of the Potomac was only part of his great general plan for the advance of all the Union armies somewhat toward a common center, with a view of defeating all opposing forces and closing in the net on whatever organized resistance might then remain.

On the extreme right Banks was to move on Mobile. Then came Sherman who was to advance into the heart of Georgia with Johnston's Army as his objective. Sigel, who was covering the Valley, was to move forward two columns. Meade, with the Army of the Potomac, was to move against Lee and follow him wherever he might go. Butler with the Army of the James, was to operate against Richmond from the south side of the James River. With the exception of Banks, all columns were to move forward together, thereby pressing and threatening the Confederates at all points simultaneously, and preventing them from reinforcing one another. Banks and Sigel failed in their part of this grand campaign, but otherwise it worked out practically as ordered.

Grant's first intention seems to have been to direct operations from the west. But after his conference with the President and the military authorities at Washington he realized that his place as Commanding General of all the armies was in the East; not in a hot-bed of intrigue like the capitol, but in the field. He therefore decided to accompany the Army of the Potomac.

We read so often that the part played by the Army of the Potomac in its overland campaign against Lee ended with its defeat at Cold Harbor, and that there followed a week of indecision on Grant's part, that we are likely to forget that even during those terrible days of battle, when only discouraging news was being received at his headquarters, Grant was work-

ing out the details of a forward movement which would not only place the Army of the Potomac across the Chickahominy and James Rivers, but would furnish history with one of the greatest military achievements ever recorded. The plans for this movement were communicated to Washington on June 5th, the battle having ended on the 3d, but the army was already busy in preparation for its march and the advance of its base.



GENERAL U. S. GRANT.

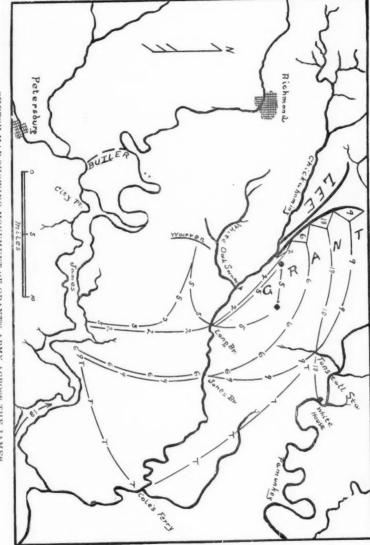
Military men have long appreciated the commanding genius displayed by Grant in the conception and execution of his advance of the Army of the Potomac across the Chickahominy and James, but the magnitude and importance of this movement have never been generally understood. There are several reasons for this. First, the average reader believes that the genius of a general is shown only in battle resulting in victory. Again, Grant's reports of his operation were very

modestly told, as were Meade's and those of Humphreys, Meade's Chief of Staff. Most of the subordinate commanders made only brief reports of their marches from Cold Harbor to Petersburg, not realizing the magnitude of the whole movement of which their operations formed a part. And, finally, the whole movement was followed by the assaults on Petersburg, so there was no time for the writing of detailed reports.

The battle of Cold Harbor ended on the afternoon of June 3, 1864, when Meade sent out an order suspending further offensive operations. The corps commanders were directed to intrench their positions with a view of moving against the Confederate position by regular approaches. The army was to hold substantially the ground it occupied at the close of the battle, taking advantage of any favorable circumstance that might present itself until the cavalry could be sent west to destroy the Virginia Central Railway, Lee's route of supply north of Richmond; and until Grant could perfect all his arrangements for the movement of the army across the James.

Grant wisely determined that in the event of Lee's electing to hold Richmond, his investment of that city should be on ground of his own choosing where he would have the maximum of tactical and strategical advantages. It is unfair to say that Grant's overland campaign ended with the defeat at Cold Harbor because he continued his advance by a most brilliantly conceived and executed flank march instead of directly through Lee's position. While Grant had been unable to actually defeat Lee seriously in any one battle, he had accomplished the same results by the constant wear and tear on the personnel, materiel and moral of Lee's army.

On the morning of June 4th, the Army of the Potomac was thus disposed; the refused right, swinging to the right beyond Bethesda Church, was held by Burnside with the Ninth Corps; then came Warren with the Fifth Corps; then Birney's Division of Hancock's Corps, the second; then followed Smith with the Eighteenth Corps; then Wright with the Sixth Corps; then Hancock with the second Corps, less Birney's Division. One cavalry division covered the right of the army, and another coverd the left. A third was placed behind the right center, n reserve.



The numbered broken lines are the routes taken by each corps. The line marked with a "T" is the route followed by the Army Train. SKETCH MAP SHOWING MOVEMENT OF GRANT'S ARMY ACROSS THE JAMES.

The actual march of the army did not commence until the night of the 12th. In the meantime the right was drawn in and the left was extended to the Chickahominy; two attacks by Early on the Union right were repulsed; Sheridan was dispatched with two cavalry divisions to destroy the Virginia Central Railroad, and Warren with the Fifth Corps was placed on the left and left rear of the army ready to make his critical and important move in the proposed flank march. These changes in the position in the line were made at night, and the difficulties of the movements were greatly increased by the character of the terrain along the Chickahominy. The roads were poor and narrow, the country heavily timbered and covered with underbrush. The men would often fall, and the marching columns would soon become more or less disorganized, since in the darkness the officers could not be distinguished nor those who disobeved them.

There were enough difficulties confronting the operations proposed by Grant to have deterred the ordinary man. The entire army of five corps numbering about one hundred and fifteen thousand men had to be disengaged from its locked embrace with a powerful enemy; it had to be withdrawn without bringing on a serious battle; the various columns had to be marched to the rear and by the flank, then swung in a great change of direction and formed into flank columns: and after being properly covered these columns had to cross the treacherous Chickahominy and the broad James. Not a single bridge was standing on the Chickahominy at the points where Grant's columns would cross, and there was no bridge over the James. In addition, the Army base at White House had to be advanced to the James, and fifty miles of trains marched from White House across the Chickahominy and the James to a new base. All this had to be accomplished in the immediate presence of a veteran army led by one of the greatest and most successiful generals who had ever commanded in the field.

Grant withdrew and advanced his army by pivoting it on one corps which crossed the Chickahominy and took up a defensive position covering all lines by which Lee might advance from the direction of Richmond and across White Oak Swamp. An interior intrenched line had been constructed on the Cold Harbor battlefield which was to be held temporarily, to perfectly cover the withdrawal in case Lee discovered the movement and attacked during the early stages of its execution.

After dark on the evening of June 12th, Warren, with the Fifth Corps, which had been placed on the left of the army the army for the purpose, preceded by Wilson's cavalry, crossed the Chickahominy on a pontoon bridge built at the site of Long Bridge. After crossing, Warren turned toward



GENERAL GRANT'S BAGGAGE WAGON.

Richmond and advanced into a position covering all approaches by which Lee might advance. As long as Warren held this position, all the ground in his rear was covered, and the march of the columns across it to the James would be unmolested. Literally, these columns would be pivoting on him. At the same time Hancock and Wright withdrew into the interior intrenched line on the battlefield. Smith with the Eighteenth Corps and the right-of-way withdrew and marched to White House, where his corps embarked and moved by

water down the Pamunkey and up the James, reporting back to Butler to whose army it belonged. All the cavalry, artillery and trains of the Eighteenth Corps joined the trains of the army at Tunstall's Station, and marched with them overland.

When the roads were clear of Warren's troops Hancock with the Second Corps followed Warren across the Chickahominy and marched srtaight to the James River in rear of Warren's position.

Burnside with the Ninth Corps, from the extreme right of the line, also withdrew after dark, and marched by way of Tunstall's Station to the side of Jones's Bridge, its point of crossing. Wright with the Sixth Corps withdrew at the same time as Hancock, and marching by a route about midway between those followed by Burnside and Hancock, directed his column on Jones's Bridge. Burnside and Wright were to cross the Chickahominy at the same point, and the column reaching the place of crossing first was to have the right-of-way. As it happened, the Sixth Corps was the first to cross on the bridges constructed by the Engineer Corps at the site of Jones's Bridge, the Ninth Corps having been delayed in its march by the army trains blocking part of the road assigned to it.

The trains assembled in the vicinity of Tunstalls' Station, and, guarded by a division of the Ninth Corps and a brigade of cavalry, they moved to Cole's Ferry which was their designated point of crossing the Chickahominy.

BRIDGING THE CHICKAHOMINY.

Upon the arrival of Wilson and Warren at the site where Long Bridge had formerly stood, it was found that there were two distinct streams to be crossed by the pontoons. Against the north bank lay the main channel, but beyond this was a low island, about two hundred feet wide, and still beyond a smaller branch of the Chickahominy. The river was filled with sunken piles and other timber, and this debris of the old bridge had to be cleared away and the abutments cut down. As a result, it took two hours and a half to complete the bridge. It was dismantled in forty-five minutes after the tail of Hancock's corps had cleared it.

When the head of the Sixth Corps arrived within supporting distance of the site of Jones's Bridge, the engineers began their work. Here also there were two streams to be bridged. Three complete bridges were built, one with the wooden pontoon, one with the canvas pontoon and a permanent bridge.

It developed later that the bridging material sent with the trains was not nearly sufficient to bridge the Chickahominy at Cole's Ferry, and all the pontoon bridging material with the marching columns had to be assembled at that point. The pontoon bridging material used at Jones's Bridge upon being taken up was sent direct to Cole's Ferry. The bridging material that had been used at Long Bridge had followed Hancock's column to Charles City Court House, and it had to be sent back from that place to Cole's Ferry where the trains were still waiting to cross.

The width of the river at Cole's Ferry was such that all the bridging material thus collected could not span it without extensive timber and corduroy approaches. Finally, when all the pontoons had been built into the bridge, working from both ends, it did not meet in the center by about thirty feet. The bridge was then detached from the north shore, connected at the center, and the approaches on the north shore, extended by the construction of additional crib and corduroy work. The total length of this brigde was twelve hundred feet, and of the timber and corduroy approaches about four hundred and fifty feet.

The method employed in dismantling this famous bridge is particularly interesting. All the wagon transportation pertaining to the pontoon material was marched to the James River. The bridge itself was broken up into rafts, a suitable guard of enlisted men was detailed for each, and these rafts were then towed by steamer down the Chickahominy and up the James, where they rejoined their wagon transportation.

This delay of the trains at Cole's Ferry had an important bearing on the march of the army across the James and its advance against Petersburg, as we shall see later.

CROSSING THE JAMES.

Grant's instructions to Butler, dated June 11th, directed that officer to commence at once the collection of all means within his reach for crossing the army upon its arrival at the James River. Butler was directed to have a pontoon bridge laid if there was a place below City Point where it could be done. In obedience to these instructions barges, landing material and water transportation had been assembled in the vicinity of Wind Mill Point on the James. Butler fully expected that his chief of engineers, General Weitzel, would have a bridge ready by ten o'clock on the morning of the fourteenth, as General Benham with the bridging material from Fort Monroe was expected to arrive in the vicinity of Wind Mill Point during the night of the thirteenth. Due to negligence on the part of the officer sent up the James in charge of this bridging material, it did not arrive until the afternoon of the fourteenth. Hancock had arrived with his corps during the previous evening.

Being anxious to expedite the movement of troops across the James, Grant, at nine thirty on the morning of the fourteenth, informed Meade that there was water transportation available for immediate use in crossing troops. Meade was instructed to leave one corps on the north bank until the artillery and wagons were all over. Hancock thereupon began crossing his corps, and at six thirty on the morning of June 15th all of his infantry was over the James except one regiment which remained behind for fatigue.

Now to return to the bridge. The approaches on both banks were completed by ten o'clock on the morning of June 14th. This involved the building of considerable corduroy and crib work on both banks, together with a pier one hundred and fifty feet long on the north bank. The bridging material finally arrived on the afternoon of the 14th, and the throwing of the bridge began at once.

The battalion of the United States Engineers did the greater part of the work. This famous bridge contained one hundred and one wooden pontoons, with a total length of twenty-two hundred feet. The depth of the channel was from twelve to fifteen fathoms, and the tidal current was strong, rising and falling about four feet. In the channel the pontoons

were anchored to vessels moored above and below for the purpose. The bridge was built from both ends by successive pontoons and rafts. It was commenced about four o'clock in the afternoon and completed by eleven o'clock at night on the 14th, and was constructed so as permit the center section, a raft of one hundred feet in length, to be withdrawn for the passage of vessels. The greater part of the infantry and artillery, and all the wagon trains of the army, passed this bridge safely and without interruption, except such as resulted from a vessel above slipping her anchor thereby carrying away a part of the bridge, which, however, was promptly restored.

Meade's order for the passage of the army directed Burnside to cross first with the Ninth Corps by the pontoon bridge. The infantry of the Fifth Corps was to ferry across, using the water transportation which had been used for the same purpose by Hancock in crossing the second Corps. The artillery and horses of the Fifth Corps were to use the pontoon bridge. Wilson's cavalry and the Sixth Corps were to remain on the north bank to cover the crossing of the army amd the trains, and when all were over Wilson was to be drawn in and across the river, followed by the Sixth Corps.

Grant's idea was to hold the cavalry and the Sixth Corps on the north bank, and push everything else across the river; but due to the non-arrival of the army trains, which were stopped for want of bridging material at Cole's Ferry on the Chickahominy, Grant directed Meade to modify his order so as to have Burnside, Wright and Warren sent over their trains and surplus artillery with suitable guards, stating that he did not feel justified in crossing more troops until the army trains drew nearer. Subject to this delay the army completed its crossing practically as ordered.

It was not until the afternoon of the seventeenth that Wilson began crossing his cavalry followed by the Sixth Corps, part of which embarked and proceeded up the James reporting to Butler.

Part of Wilson's cavalry was later recrossed to cover the movement of the general cattle herd to the south side of the river.

HANCOCK'S DIFFICULTIES.

Meade's order to Hancock, dated late in the evening of the 14th, informed that officer that Butler had been ordered by Grant to send sixty thousand rations to Wind Mill Point for supplying the Second Corps. The same order directed Hancock to move his corps by the most direct route to Petersburg, just as soon as the rations had been received and issued. Hancock informed Meade that he was not out of rations, his corps being supplied for three days. If Meade ever received this information he did not act upon it.

The infantry of Hancock's Corps was ready to begin the march to Petersburg at seven o'clock on the morning of the 15th, but the rations from Butler had not arrived. It is interesting to read the contradictory messages that passed between Meade and Hancock concerning the arrival or non-arrival of the rations; but it finally became necessary to order the Second Corps to march without waiting for them.

Hancock's message for the column to move was sent across the river by signal telegraph, but it miscarried. Colonel Morgan, his Chief of Staff, carried the order also, but the ferry taking him across the James grounded, and he was delayed half an hour. In consequence the column did not move until half past ten in the morning, a delay of about four hours. The march of the Second Corps on Petersburg was further delayed owing to the inaccuracies of the map furnished, so that it was about dark when Hancock joined Smith before the city.

Had the incident in connection with the rations not occurred, Hancock would have arrived before Petersburg with probably two hours of daylight remaining to him. He would have attacked without delay, for he was not a man to hesitate a moment with such an opportunity before him, and Petersburg which was at that time insufficiently garrisoned, would undoubtedly have fallen.

If Grant had directed Meade to rush one corps on to Petersburg, Meade would certainly have had it there; but the moment the Commander-in-Chief took it upon himself to interfere with details and concern himself about the rations of a single corps of one of his armies, which after all did not need rations,

he put obstacles in the way of accomplishing the final result, and by delaying Hancock's arrival at Petersburg several hours, he saved that city to the Confederates.

During the whole movement Grant completely mystified his opponent, and it was not until ten o'clock on the night of the 17th that Lee could be perusaded that the Army of the Potomac was moving against Petersburg and not against Richmond on the north bank of the James. This mis-conception of the actual military situation seems particularly strange on Lee's part, as Grant's movement was so clearly interpreted by Beauregard who commanded at Petersburg and by several of Lee's own immediate staff officers.

As military writers gather more and more information concerning this grand maneuver it will become better understood and more generally appreciated; and as this evidence is unfolded the strength of Grant's character and his genius as a commander will be more fully revealed.

DAILY DIARY OF EQUITATION WORK AT THE MOUNTED SERVICE SCHOOL.

DECEMBER, 1911, AND JANUARY, 1912.

TRAINING CLASS.

Schedule December 1st to 23d-3/4 hours per day.

- In hall: Work out at trot and canter. Review at will,*
 half turn in reverse, individual small circles, increase
 and decrease of gaits and halts from slow trot. Emphasized holding distances in column at slow trot and
 movements by the flank.
- 2. Same as 1st.
- In hall: Same as 1st, with half turn in reverse executed in column at slow trot, and individual circles at walk.
- In hall: Review work at will, particularly on small circles with haunches held so as to track the forehand. Half turn in reverse in column, slow trot.
- 6. In hall: Review at will. Advance: explanation and exhibition of "Haunches Right" (left). Each colt required to do a few steps at a walk of haunches right on right hand and haunches left on left hand.
- In hall: Gallop at will on both hands. Individually,†
 haunches right and left as for the 6th, but requiring
 more steps.

^{*&}quot;Review at will" means that the student officer works out his colt at will, puting him through all completed exercises and paying particular attention to the correction of faults as indicated by the instructor. Good work by the colt is immediately rewarded by relaxing the collection and patting. When the work is poor the student begins again at the walk and practices such exercises as the instructor advises are good for the particular fault or weakness of his colt.

[†]Where the exercises are given "individually" each student officer prepares his colt "at will" for the particular exercise and when ready executes the same at a prescribed place and before the instructor who indicates the fault, gives the correction and which the student again works out "at will". A satisfactory performance is eventually demanded of the colt. If necessary the instructor rides the colt in order to demonstrate the means by which the required results are obtained.

- In hall: Review at will. Haunches right and left as for 6th and 7th, except that colts were required individually to execute a few steps at the slow trot.
- 9. Outside: Road work at walk and trot.
- 11. Outside: Road work at walk and trot.
- 12. In hall: Work out. Drill in column at slow trot, movements by the flank and obliques. First rider at canter twice around the hall passing column once and joining on rear. Review at will. Balanced trot with collection, small circle, half halt increase and decrease of gait haunches right and left.
- 13. In hall: Work out at canter. Review at will at slow trot. Haunches right and left at slow trot individually. Advance, "On two tracks right (left) oblique," executed at a walk.
- 14. In hall: Work out at trot, same as 13th, except that more was demanded of the colt in the exercises on two tracks right (left) oblique.
- 15. In hall: Work out at trot, taking canter on both hands on the track with true lead by changing hands at the trot through the hall. Swinging by fives by the flank at the trot down the length of the hall, and again moving by the flank so as to keep on same hand at the end of the hall, preserving dress, interval and cadence.
- 16. In hall: Work out at trot. By the flank by fours at trot as for fives on 15th. Haunches right on right hand and haunches left on left hand at slow trot. On two tracks right (left) oblique at walk. Canter in column on tracks and on circles.
- 18. In hall: Small circles individually at slow trot, making use of the corners. Haunches right and left and oblique as for the 16th. Canter in column on circles. First rider twice around hall at canter and close on rear of column.
- In hall: Work out at trot. Small circles individually in the corners on left hand, followed by canter in column on left hand, same to right. Review at will at slow trot.
- 20. In hall: Drill in column at slow trot. Canter on both hands. Circles to right (left) about from column at the walk. Advance: "Haunches right" on left hand and "Haunches left" on right hand at a walk, individually.
- 21. In hall: Same as 20th.

- In hall: Work out at trot and canter. By the flank by fours down center of hall at trot. Work with haunches as for 20th.
- 23. In hall: Work out on both hands at trot. Drill in column, by the flank and half turns in reverse at slow trot. Circles right (left) about at walk.

Schedule January 3d to 14th-3/4 hours per day.

- 3. In hall: Longed 15 minutes. Work out at trot on both hands. Drill in "Haunches Right" (left) at a walk.
- In hall: Longed 10 minutes. Work out at trot. Review of work of suppling the haunches at slow trot, individually.
- In hall: Longed thoroughly. Work out at trot to both hands.
- 6. In hall: Work out at trot to both hands.
- 8. In hall: Longed 5 minutes. Work out at trot on right and left hand at will. Drill by threes by the flank down center of hall. "On Forehand Half Turn in Reverse," "On right into line." Review of work in suppling haunches. Individually, "On Two Tracks Right (left) Oblique."
- 9. In hall: Longed 10 minutes. Drill in slow trot, first trooper front to rear, last trooper rear to front, trot; on right (left) into line; half turn in reverse; troopers circle to the left (two circles). At will 10 minutes. In column, change hands through half the hall at slow trot, swing haunches right (left) and come on the track on "two tracks."
- In hall: Work out on both hands at a trot. Drill slow trot, half turns in reverse, troopers circle right (left), spirals and serpentine.
- 12. In hall: Longed 15 minutes. Work out at jog trot on both hands.
- 13. In hall: Work out at slow trot, and same as on the 11th.

Schedule January 15th to 31st, one hour per day.

- In hall: Work out on both hands. Individually, all the previous haunch exercises. Drill in column at slow trot.
- 16. In hall: Drill at slow trot. Gallop at will on both hands. Individually, haunches right (left) and on "two tracks" right (left) oblique. From head of the column take the center paths the column once and close on rear.

- In hall: Work out at gallop on both hands. At will 15
 minutes. Drill in column, haunches right (left) and
 on two tracks right (left) oblique.
- Work out at trot. Gallop on both hands. At will 15 minutes. Drill in two track exercises and circles.
- In hall: At will 15 minutes. Individual work, asking greater collection and approaching the "school trot."
- In hall: Work out at trot 15 minutes at will. General exercises.
- 22. In hall: Work out at trot. Canter on both hands.
 Work at will 20 minutes. Individually, vertical and
 lateral flexions. Drill in column in the exercises and
 demanding greater collection.
- 23. In hall: On the track in column, first trooper front to rear, slow trot, last trooper rear to front, canter; from head of the column leading trooper canter twice around and close on rear of column. Work at will, 20 minutes. Drill—troopers circle to the left (right) two circles; haunches right (left); on "two tracks" right (left) oblique; on right (left) into line.
- 24. In hall: Work out at trot. Work at will 20 minutes. In column, first rider from slow trot to canter, and make circle in each end of the hall and close on rear of column. Drill in column in haunch exercises.
- 25. In hall: Work out at trot. Short extended trot on each hand. Work at will 20 minutes. Individually, on one long side of the hall, trot, slow trot, school trot, trot and halt. From head of column take canter, and on long side of hall extend to gallop and then come to canter on circle at the end of the hall.
- 26. Out doors: Road work, walk in pairs.
- In hall: Work out at trot and canter. Drill by platoons. Canter in column on circles.
- 29. In hall: Work out at trot. Work at will 20 minutes Individually, haunches right on left hand and haunches left on right hand, swinging haunches to right, straighten and swing to the left down center of hall, at school trot. At will, canter and make small circles at each end of the hall, on both hands. Drill in column.
- 30. In hall: Work out at trot. At will, canter, making small circles in the end of the hall. Work at will 20 minutes. Individually, haunches right on left hand and haunches left on right hand, lateral flexions left on right hand, and lateral flexion right on left hand. Short drill.

31. In hall, at trot: Canter at will, making small circles at the four changing points (points from which the head of the column leaves the track in changing hands and marked with signs on the knee guard). Work at will 20 minutes. Individually, lateral flexions at school trot. Developing the canter from the cshool trot.

The extreme cold during the first half of January very seriously affected the routine of the work with this class.

For "Half turns in reverse" see Pages 37 and 38, "Notes on Equitation and Horse Training."

Only such exercises as have been given in printed form to the student officers are reprinted with this diary.

HAUNCHES RIGHT (LEFT)

Purpose:

This is an intermendiate lesson preparatory to "Shoulder in."

In the lesson "half turn in reverse," the colt has learned to yield one leg by being placed in a position where resistance is almost impossible. Haunches right (left) has the same object in view, that is, teaching the colt to yield to the leg, but goes further and also demands more discipline. A secondary object of this exercise is the suppling of the hocks and shoulders. This is the first distinct lesson in "two track" work.

Execution:

The colt moves on a straight line but is set at an oblique to his original direction and so that the front and hind feet travel on two parallel tracks. The colt is straight from poll to croup. The front feet cross each other as do the hind. The displacement of the haunches is very slight at first, the outside feet stepping more in front than across. The angle at which the colt is set with regard to his original direction is rarely more at any stage than 45°. The first lessons are given at a walk and the gait is never faster than the "slow" or "collected" trot. The lesson is well executed when the balance, cadence and lightness of the mouth are maintained, the feet cross smoothly, and there is no bending in neck or body from poll

to croup. The rider's weight is thrown slightly towards the direction in which the colt moves.

The Aids:

Being on the right hand the rider's left leg is applied at the rear edge of the girth (or silghtly further back if necessary) with an alternating pressure, in unison with the left hindleg, until the haunches are moved to the desired distance from the track. This leg is also responsible for driving the colt forward. The rider's right leg applied at the girth measures the degree of displacement by stopping the haunches. It prevents the colt from running from the opposite leg, from losing the cadence, and his forehand from leaving the track. It also assists in maintaining the collection and holding the colt up to the bit. The reins are used to maintain the direction and to keep the neck straight. The right rein leads and is "opened" only so much as is necessary to give the direction, the left rein is "closed" and prevents the neck from bending.

Faults:

- 1. Legs knocking together—the angle is too great and the joints not yet supple enough to make the cross step.
- 2. Haunches slew away too much from the displacing leg—stop with other leg.
 - 3. Forehand drives too fast—opposite leg and reins.
- 4. Losing collection—straighten out on the track, collect the colt and try the lesson again.
- 5. Bending neck or body—keep straight by use of reins and legs.

Being on the right hand to execute "Haunches Left"—the forehand is moved inward as if going in an oblique, the movement is stopped by a slight "half-halt" and the sidewise movement begun with the aids as prescribed.

Being on the right hand at the command "On two tracks Right Oblique" the colt moves out on the oblique about 45°, the body remaining parallel to the track on which he was moving, the aides being practically the same as for the haunches right (left), except that the reins must now give the direction alone, as the wall furnishes no guide for either the forehand or the haunches.

Haunches Right (Left) is next given on the circle but the displacement of the haunches to the inside or outside is still less than when working on straight lines.

The lesson should never be given for long distances and never at fast gaits.

HAUNCHES IN (OUT).

Purpose:

To secure greater suppleness and agility in the horse by flexing the muscles on one side and correspondingly contracting those on the other, to enforce obedience to the aids, and to further his general physical development.

Execution:

This is a lesson in "two track" work. The bend in the horse is more decided than in any lesson heretofore attempted. The horse is practically bent around the inside leg (the bend being principally in the ribs and loins) in such a manner that the forehand moves approximately parallel to the wall while the haunches are displaced to the inside. The forefeet stride straight to the front, the displacement of the haunches is slight in the first lessons but is gradually increased until the hind feet move on an independent track which is also parallel to the wall. When the bend is slight the hind feet stride nearly straight to the front. As the bend increases the outside hind crosses the inner hind. The poll should be flexed to the inside rein. The exercise should be executed only at the collected walk and balanced trot.

Aids:

Being on the right hand to execute "Haunches In."

The left rein demands a very slight flexion, keeps the left shoulder from falling out, and is the principal rein aid in making half halts. The right rein leads, takes care of the elevation and maintains a flexion.

The right leg is firmly placed at the girth and acts in the manner of a post around which the horse's body is bent. It guards the forehand from falling in, drives the horse forward, and also assists in preventing too great a displacement of the haunches.

The left leg used in unison with the horse's right foreleg, is placed in rear of the girth and displaces the haunches to the desired degree. It also assists in driving the horse forward.

To straighten the horse use the inside leg and outside rein.

Faults:

- 1. The outer shoulder "falls out"——guard more carefully with outside rein close to withers.
- 2. The horse will not bend in the body, but only slews the haunches around and crosses his feet—stronger use of inside leg and rein. If this does not suffice go back to flexions and haunches right (left).
- 3. The horse loses the cadence, checks up, and gets behind the bit—decrease the displacement and drive forward with both legs. Or if necessary straighten the horse, drive him well into the bridle, and begin the lesson again.

Haunches out:

The execution and aids are the same as "haunches in," except that the hind feet now stride along the track and the forehand is brought inside.

Being on the right hand to execute "haunches out."

Obtain a lateral flexion to the left rein, open the right rein and lead the forehand off the track to the right. The rider's left leg is firmly placed at the girth, the right leg in rear of the girth.

To straighten the horse, release the aids so as to bring the forehand back on the track.

SCHOOLED CLASS.

Schedule December 1st to 23d-3/4 hours per day.

- In hall: Five minutes at will, walk and trot, both hands.
 On track, walk, trot, gallop, both hands. Frequent short rests. Walk, trot, gallop, trot, slow trot, halt,—legs closed, heels down, upper part of body back. Circles, by flank, at halt, dismounting—with and without stirrups, keeping horse in place. Horses nervous and stirred up.
- 2. In hall: Review same as 1st.
- 4. In hall: More collection, deeper seat, longer stirrups, legs farther back, and heels more depressed being insisted upon. Warming up for five minutes at walk and trot, both hands. On track in two sections, walk, trot, canter, circles, by the flank, first trooper from front to rear, both to inside and to outside between column and wall. Walk from canter. Work on straight lines.
- 5. First platoon in hall: Review same as fourth. Second platoon outside. Rode in woods on track at walk, trot and gallop. Took three log jumps in woods at very slow pace. Each rider after passing over, halted, faced around and kept his horse standing about fifty yards beyond the hurdle until the last individual jump had been made over that particular hurdle.
- 6. Review same as 5th.
- Second platoon in hall: Review same as 4th.
 First platoon went on hunt with fox hounds in the vicinity of Morris Hill and to the north.
- 8. In hall: Five minutes individual work on track, at walk and trot on both hands. On track in two sections, right and left about, individual circles, by the flank, first trooper from front to rear, executed at trot. Walk, trot and canter on track, both hands. At halt, dismounting and mounting with stirrups both sides, horses held in place. Suppling exercises, (leaning back, looking to right and left rear by twisting body at waist, rising knees from flaps, etc.).
- 9. In hall: Review, same as 8th.
- 11. Outside: Walk, trot and gallop on track in woods-Took four small jumps about three feet high. All horses were halted just beyond first jump after clearing same and kept standing until the entire class had passed over and joined on far side. The remaining three jumps

were taken in succession at a slow gallop, horses being brought to trot between jumps and kept about fifty

yards in rear of the preceding rider.

- In hall: Five minutes for individual work out on track on both hands. On both hands collected walk, slow trot, trot out. Canter, slow trot, walk. At trot, first trooper from front to rear. Individual canter from head of column around track to rear of column. Advance, "haunches right" (left), on track at walk (haunches being set on side toward interior of hall).
- 13. In hall. Review, same as 12th.
- In hall: Review, same as 12th.
- 15. In hall: Review, same as 12th. Advance, by threes from column through hall and back to column at opposite end of hall. In column at a given point, the first trooper turns to right, second to left, third to right, and likewise throughout, the odd numbers being formed into one column with extended distances, and even number into another; columns pass around so as to reform a single column by both changing direction at the same point.

Haunches right (left) to inside at a slow trot. Haunches right (left) to outside at a slow walk.

- 16. In hall. Review, same as 15th.
- In hall: Walk, trot, slow trot and gallop both hands. First trooper from front to rear at trot. First trooper leave column by an oblique, halt near column, horse kept in place, parallel to wall, join rear of column when it passes. By threes by flank through hall, circles, abouts, changes of gait. In column odd numbers to right, even numbers to left and form normal column. Haunches right (left), both to inside and to outside. Half turns in reverse.
- In hall: Review, same as 18th. Advance, individually halting from a collected walk and moving out at a trot. Work at haunches right and left has been discontinued; also work by threes has been discontiuned. A whip is being carried on each horse.
- 20. In hall: Review, same as 19th.
- 21. In hall: Review, same as 19th.
- 22. In hall: Review, same as 19th.
- 23. In hall one hour: Workout for five minutes individually. On track in two platoons; walk, slow trot, trot out, canter slow trot, walk. Large spirals, col-

umn by flanks, individual about, slow trot from halt, halt from slow trot. On two tracks, right (left) oblique. Individual about at canter. At halt, without stirrups, dismount to left, vault and mount.

Schedule January 1st to 14th-3/4 hours per day.

- 3. In hall: Work out at will at walk and trot on both hands for five minutes. Trot and gallop on both hands on track. Individual troopers taking halt on inside track from the trot and then joiming the rear of column as it passes. Halt turns in reverse; individual circles, serpentines, gallop twice around track and joining rear of column. Work by threes in halting, progressively taking slow trot, trot, extended trot and the reverse. Few minutes cooling out walk. Thermometer 5° above zero.
- 4. In hall: Review of the 3d.
- 5. In hall: Review of the 3d.
- 6. In hall: Walk and trot on tract on both hands, while at trot executed by the flanks, individual abouts, spirals, and serpentines. Taking gallop on large circles on both hands. Platoon galloping on large circle, individuals leave that circle and take large circle at opposite end of hall.

Column at trot, first trooper from front to rear. Column at trot, first trooper pass around track at gallop and join rear of column. Changing of gaits. Frequent short rests with horses' heads lowered and necks extended. Explained purpose of and how to execure "Haunches In" (out). Thermometer 12° below zero.

- 8. In hall: Work out on both hands at walk and trot for five minutes. At trot and gallop on large circles, spirals, serpentines, obliques, individual circles, by the flank, changes of direction and individuals riding on a straight line. Individual gallop around track from head to rear of column. Individual halting on inner track. Explanation of backing.
- 9. In hall: Review, same as 8th.
- 10. In hall: Review, same as 9th. Advance, executing abouts and from the inner track to oblique back to the track by "On two tracks right (left) oblique."
- In hall: Review, same as 10th. Thermometer 9° below zero.

- 12. In hall: Review, same as 10th. Thermometer 20° below zero.
- 13. In hall: Review, same as 10th. Advance abouts at the gallop. Explanation and execution of "On the forehand to the Right" (left) at a halt.

Schedule January 15th to 31st-one hour per day.

- 15. In hall: Work out at walk and trot on both hands at will.

 Serpentines and sprials. Gallop on large circles and on track. By flanks at trot and gallop. Last trooper halting on inside track and joining head of column as it passes. Riding on straight lines at trot and gallop. Advance, "Haunches In" (out). Putting horses through chute for jumping practice with low jumps in same and the horse loose.
- 16. In hall: Same as 15th, except no jumping.
- 17. In hall: Same as 16th.
- 18. In hall: Work out, circles, serpentines, etc., same as usual. At school trot "Haunches in (out)." On forehand to the right or left while at a halt. Backing. Practicing taking the gallop while riding on a straight line down center of hall. Horses without riders put through jumping chute with 3 ft. jump.
- 19. In hall: Same as 18th except that no jumping was done.
- 20. In hall. Same as 19th.
- 22. In hall: Same as 18th. Special attention to riding on a straight line with the application of the proper aids to hold the horse on the line, and to taking the gallop on executing right or left about.
- 23. In hall. Same as 22d, except that no jumping was done.
- 24. In hall, one half hour: At walk, trot and gallop over small and large circles, by flanks, straight lines, backing, turning on forehand to right or left. Took one 3 ft. 8 in. jump with rider. Outside one half hour, on road at walk and trot.
- 25. In hall and outside same as the 24th, except that horses were put through jumping chute without riders.
- 26. In hall one hour: Same as 24th.
- 27. In hall: Same as 25th. Advance, "Haunches In (out)" through center of hall. Jumped 3 ft. rail with riders.
- In hall. Work out, large circles, serpentines, etc., as usual. Individual small circles in corners of hall with lateral flexions to the inside. Oblique on two tracks,

haunches, in (out), backing, turning on forehand, riding at trot and gallop, individually on straight lines, half turns in reverse, work by threes and the extended gallop.

- 30. In hall: Same as the 20th.
- 31. In hall: Quiet work out at the trot. Most of the hour spent in having the individual riders practice coming to the halt from the walk and again promptly take the walk. This to teach the proper application of the aids, to maintain the lightness, responsiveness, collection and suppleness of the horse. Exercise in light fingering of the reins.

JUMPING CLASS.

Schedule December 1st to 31st-3/4 hours per day.

- 1. In hall: Work out at will; individually taking gallop leads on diagonals of hall; jumping, small wicker in center at a walk, halt at wall, turn to left taking 3 ft. wicker jump on track at a gallop, no wings.
- In hall: (Suppling exercises for riders and horses, with and without stirrups and reins; gallop leads on diagonals). Outside: In column well strung out winding through woods at trot and gallop; on the road in pairs at walk.
- 4. In hall: Same as 2d (also jumping three wicker jumps, 1½ to 3 ft., about 20 ft. apart without stirrups or reins.
- Outside: Winding through woods at trot and extended gallop; over double in and out of logs at a trot.
- Outside: Up and down steep banks and over ditches at walk and quiet trot.
- 7. In hall: Same as 1st.
- In hall: Work out at will; long gallop in column of two's, closed and extended distances.
- No work by class: Horses led by grooms dismounted for one half hour.
- 11. Outside: Winding through woods at all gaits taking low jumps.
- 12. Outside: Through woods and hill pasture well strung out in column at gallop, taking five jumps, about 3ft.
- In hall: Work out at will, trot and gallop; galloping individually and in pairs.
- In hall: Repeated work in hall for 2d and 4th as shown in brackets.

- 15. Outside: Over Republican jumps strung out in column at gallop; five horses ridden three miles in seven minutes over five jumps 3 ft. to $3\frac{1}{2}$ ft. high, others one mile in $2\frac{1}{2}$ minutes, over three jumps.
- 16. Outside: Class divided into three parts under leaders given different routes and to concentrate at designated points in one hour, distances 5½ to 6½ miles.
- 18. Repeated work of 4th.
- 19. In hall: Trot and gallop, individual and in column; jumping over small wicker jump in center at a walk, halt at wall, turn to right taking 3 ft. wicker jump on track at gallop; halt at end of hall, turn about and over two 3 ft. wicker jumps on track about 100 ft. apart, at gallop, no wings.
- 20. Same as 19th.
- 21. In hall: Trot and gallop, individually and in column, jumping 3 ft. wicker jump in center of hall, no wings, approaching at slow trot, jumping at gallop.
- 22. Same as 21st; also taking jump at slow trot.
- 23. In hall: Senoir instructor in charge; suppling exercises for horses and riders; jumping wickers, single jump at walk, in and out jump at trot, no wings.

Schedule January 3d to 14th—3/4 hours per day.

- 3. In hall: Suppling exercises for horses; jumping two 3 ft. wicker jumps on track on opposite sides of hall, taking jumps at slow gallop, trot in between.

 Began accustoming horses and riders to use of whip.
- 4. Same as third.
- In hall: Suppling exercises for horses and risers; jumping same, except 1½ ft. wicker in front of one jump, galloping in between jumps.
- 6. In hall: Suppling exercises for horses and riders; jumping 3 ft. wicker in center of hall at trot, no wings, 3 ft. 8 in. bar on track at gallop.
- 8. In hall: Suppling exercises; jumping 3 ft. wicker and 3 ft. to 3 ft. 8 in. bars on track on same side of hall, at slow trot and gallop.
- 9. In hall: Suppling exercises; jumps 3 ft. to 3 ft. 8 in. bars at slow trot and gallop.
- 10. In hall: Suppling exercises; jumps 3 ft. wickers in center 3 ft. to 3 ft. 8 in. bars in corner of hall, taken at slow trot and gallop twice over.

- 11. In hall: Suppling exercises for horses and riders; eight jumps 1½ ft. to 2½ ft. scattered over hall, being taken from movements by flank by platoon, by fours and by serpentine of column. two horses' lengths between troopers, all at slow trot, no wings.
- 12. In hall: Suppling exercises for horses and riders; four jumps in corners 1½ ft. to 2½ ft., No. 1's of sets of fours taking jumps at slow trot from circles tangent to jumps then changing jumps till all were taken; No. 2's same, etc., no wings.
- 13. In hall: Suppling exercises; jumping two jumps about 25 ft. apart 2 ft. to 3 ft. high, at a gallop, four men on track at same time, twice around. Hereafter riders report to instructor on completion of course for comments on performance instead of being advised while jumping.

Schedule January 15th to 31st—one hour per day.

- 15. In hall: Suppling exercises; jumping horses through chute, without riders, jumps 1½ ft. to 3 ft. high, 2 to 5 ft. broad.
- 16. In hall: Trotting and galloping at will and in pairs; gaiting, jumps 2 ft. wicker and brush, 3 ft. 8 in. bars, 3 ft. chicken coop, 4 ft. wicker, all on track, over twice at gallop.
- 17. In hall: Gaiting; suppling exercises and jumping without stirrups or reins; jumps 1½ ft. wicker, 2 ft. brush, and 3 ft. wicker, 20 ft. apart, over twice.
- 18. In hall: Suppling exercises; jumping over in and out, turn back and jump in, halt, then jump out at side, straight across hall and halt at wall, turn and move down track at walk, take top bar off jump, double back and take jump, jumps 2 ft. to 3 ft. high. Commonly known as pig pen jump.
- 19. Same as 18th.
- 20. Same as 17th.
- 22. In hall: Suppling exercises for horses; over two jumps 3 ft. high 14 ft. apart.
- 23. In hall: Work out 15 minutes. Outside: Forty-five minutes, walk, trot, and short gallop on flat.
- 24. In hall: Thirty minutes suppling exercises and over one jump 3 ft. 8 in. Outside: Thirty minutes walk and trot on road.
- 25. Same as 22d.

- 26. In hall: Same as 11th.
- 27. In hall: Suppling exercises for horses and riders, with and without stirrups and reins.
- In hall: Suppling exercises; horses jumping through chute without riders, jumps up to 4 ft. high and 6 ft. wide.
- 30. In hall: Jumping four jumps on track at gallop 3 ft. to 4 ft. high, twice over; suppling exercises.
- 31. In hall: Without stirrups, suppling exercises; jumping three jumps 1 ft. to 3 ft. high about thirty feet apart, no stirrups.
- Note: In addition to those previously noted the following suppling exercises for the horses have been used; abouts on the center movements by threes; at halt turns on forehand; gallop leads from trot; halting; backing. Whips are not yet used as an aid or carried while jumping.

THE BEST COLOR FOR HORSES IN THE TROPICS.

BY CAPTAIN C. C. SMITH, FOURTEENTH CAVALRY.

H AVING read Colonel Woodruff's article on "The Best Color for Horses in the Tropics," and General Anderson's note at the end of that article, in the JOURNAL for September, 1911, I desire to submit the following:

Nature, in its always perfect arrangements, adjusts itself, when thrown out of its usual course, as in the case of the domestication of the horse. It certainly planned that there should be a best color for the domestic horse in the tropics, just as it planned that in his wild state, for obvious reasons, he should have protective coloration, protection against wild beasts, and against cold and heat and gave him a shaggy or a short coat of hair to meet the temperature of the cold or the warm climate he lives in.

The question then is what is the best color for horses in the tropics? By tropics I refer to the Philippine Islands. Let us speculate on the following facts, and from them form some deductions:

For the reason that the domestic horse needs no protective coloration, he being cared for by man, he needs no solid color, as does the dun Tarpan, or wild horse of the Russian steppes; the Zebra, Quagga, and Dauw of the African deserts, with their dun and black stripes; the Kulan of Tibet, which Brehm, foremost of naturalists, says is of a yellowish brown color; the Onager of Syria, Arabia and Persia, which in color is of a beautiful white with silver lustre merging into a pale sorrel tint on the upper part of the head, the sides of the neck and body and the hips; and the Nubian wild ass whose color is of a reddish cream tinge.

As the members of the equine tribe just mentioned, and the horse himself are natives of high dry countries, and have not shaggy hair, it is fair to presume that they need no protection from cold, but that their coloration has certain functions. What are these functions? I think all will agree that one function is protection from predaceous animals, since these colors blend harmoniously with the countries over which they roam, making it difficult for the hunting, predaceous beast to see his equine prey. The dun color of the Tarpan blends admirably with the vegetation of the steppes; and the stripes of the Zebra blend by day with the color of the African deserts, and by night with light conditions. If he were all black, on a starlight night, he would appear as a black object; if all white, as a white one; but his stripes have so marked him that, in the dark he is difficult to see. In fact, Galton says he may be so near by that you might hear the breathing of one and yet positively be unable to see him.

From the foregoing we are not yet quite ready to say that coloration is for protection from the sun's rays, but Hayes says that in addition to protection against his enemies, coloration also serves as a means for one tribe to recognize other members of that tribe. He states: "The desire in the horse tribe for class segregation is an inherent instinct, and the proof of this is that any herd of wild animals will evince suspicion, enmity, or alarm at the first approach of even one of their own species which is not garbed like unto themselves. The stripes of the Nubian wild ass, and of the Somaliland wild ass are recognition marks, and the slight differences between the respective stripes of Burchell's Zebra, Chapman's Zebra and Grevy's Zebra serve a similar purpose."

Now we may say that we have found two reasons for coloration in the wild horse: Protection against wild animals, and for purposes of recognition. If we have two good reasons for coloration, why not a tird, and if there is a third, why should this not be for protection from the sun's rays? I think this can be shown.

We know without argument that all animals which have not been demesticated have their own particular colors and markings, and for the reasons already given. But there is an additional reason, that of protection against the sun's rays. That is why the Tamarau of Mindoro, and the Babiroussa (Malayan wild hog) is black; and the Muntjac (Malayan wild deer) and the monkey of the Philippines is brown. I take these four animals, for they are the best representatives of the wild beasts of the Philippines, which, in his article, I presume Colonel Woodruff means by the term "tropics."

Of these four animals the first two named live, more or less, in the open sunlight, so have scant hair; and the last two live mostly in the jungle and have thicker coats, on account of the cooler and damper temperature. But the former are black, and the latter brown. All this, from the fact that there are no predaceous beasts in the Philippines, save the python, which is rare; and the crocodile whose haunts are limited; and there is only one species of each of the aforementioned animals, thus making recognition marks unnecessary. This shows plainly that nature colors the animals in the tropics (Philippines) solely for protection from the sun's rays.

The black tamarau, and the carabao also and hog bears out what Colonel Woodruff says of the elephant, hippo and rhino; and the brown deer and monkey what he says of the bush-

buck.

We have now come to that part of our argument where we must take the color of the horse for the tropics fit in either, with the color of the tamarau, carabao and hog (black); or with the color of the muntjac and monkey (brown); and having decided on this, we must conclude what is the proper color for horses in the tropics.

I think it can be safely stated that the horse in the tropics, will receive sufficient care from his friend man to keep him enough in the shade to approximate the conditions under which the deer and monkey live with respect to lights and shades; rather than the conditions under which the tamarau, carabao, and hog live, respecting the sun and shade. This at once should give us brown as the proper color, but as the life of the horse in the tropics approximates the conditions under which the deer and monkey live in one respect only, the necessity for more or less shade, we must go back to the horse tribe to decide finally on the color.

Before deciding which is the best color for the horse in the tropics let us call attention to the fact that the Negro is black, and the Malay is brown for the analagous reason that the deer is brown and the tamarau black—the African living more in dark, damp forests like the deer, and the Malay more in the open like the tamarau.

It would seem that dun, yellowish brown dun, and "reddish cream" (sorrel) are the natural colors of several branches of the wild equine tribes; and that only domestication and consequent environment has produced variegated colors among horses. Arguing from this; the fact that the horse is a native of high, dry and presumably hot countries; that dark horses bleach in the sun to a brown color; that the deer and monkey of the Philippines represent approximately the right color for haired animals in the Philippines; that the little hair which is sometimes seen on the carabao is brown or sorrel; and finally the fact that the Filipino with his black hair and brown skin coincides, perhaps not accidentally, with the colors of the four animals of the Islands by which I have endeavored to work out the theory, I would say a brownish or some shade of dun would be the best color for horses in the tropics, and sorrel next. I say sorrel next simply because it is said to be the most natural color of the horse as developed in Arabia which is a hot country.

THE HYGIENE AND TREATMENT OF THE HORSES OF THE MANEUVER DIVISION, SAN ANTONIO. TEXAS.

BY OLAF SCHWARZKOPF, VETERINARIAN THIRD CAVALRY.

THE mobilization of approximately 12,000 men and 6,000 horses at San Antonio, Texas, in 1911, constituting a complete Infantry Division and an independent cavalry brigade, has invited a comparison between the conditions observed at this encampment and those of the camps established at the outbreak of the Spanish-American War in 1898.

The officers of the Medical Department, always alert and good advertisers of their work and the results of their work, were the first to draw such a comparison. They pointed back to the typhoid infected camps of 1898, and then showed, that this disease and others can be excluded from a military camp by a comprehensive enforcement of modern sanitary methods and by the application of preventative inoculation. The result was an "excellent" health record among our soldiers, even under the unfavorable climatic conditions prevailing during the early part of this camp. It must be admitted that this achievement is most noteworthy as an object lesson for future camps of a similar character. Other branches of the service have since made further comparisons or instituted field experiments in their respective spheres of work all interesting and valuable as recording improvement in many ways.

Nothing has been stated as yet, about the progress made in the hygienic care of horses, well or sick, of the Maneuver Division, nor has any comparison been made between the recent encampment at San Antonio and that at Chicamauga Park in 1898, where likewise a large number of animals had been concentrated. Judging from the information at my disposal, the record of the Chicamagua Camp was a bad one in this re-

spect. Not that any mistakes or neglects have been recorded about the individual care of horses as to feeding, watering, grooming, saddling, or the care of the picket lines. On the contrary, this is said to have been very good, mainly from the fact, that the previous experience of the "old army" in the Indian campaigns had forced upon our officers and men the conviction that the horse is the most precious weapon of the cavalryman: that it needed constant attention and that its care entailed much labor, but that such are well spent for mutual protection in a future campaign. In spite of this very good care of horses at Chicamauga, glanders, the most dreaded disease of horses, was allowed to enter and develop among the picket lines of that camp. At first doubts were entertained by some officers, whether the disease was real glanders or not, and when this question was finally settled in the affirmative by post mortem evidence, a ruthless carnage by the bullet began claiming several hundreds of horses as victims. Nevertheless, the disease was never fully eradicated at that camp, and was afterwards carried to civil communities of several southern and eastern states by the release of horses of the militia or by the sale of superfluous army horses. There was no proper veterinary attendance at that camp, certainly no attempt was made to establish a systematic veterinary service, a fact which sufficiently accounts for the failure of this part of the hygienic care of horses at that encampment.

In good contrast to this adverse record stands the good health maintained among the horses of the Maneuver Division. It could have been made "excellent" as was the health of our men had there existed in our army a Veterinary Corps, that could have stepped into the camp ready to assume work, as ready as were the Medical Department and the Supply Departments. As this was not the case, a veterinary service had to be improvised, causing loss of time and opportunity to prevent the introduction of the so-called shipping fever (infectious pleuro pneumonia) by remounts which had not been inoculated against the disease, resulting in the death of seventeen horses before proper precaution could be adopted to stop it. However, this was the only serious disease that threatened the horses of the camp, and this for a short time only.

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At the assembling of the Maneuver Division, about March 12, 1911, Major General Wm. H. Carter promptly directed the establishment of a Division Field Veterinary Hospital, with a capacity for one hundred horses, and several quarantine cor-The plans for such a hospital were quickly drawn, but it took four days to get the lumber and hammer together a frame for a shed, and it took nine more days to secure the necessary paulins to cover the frame. It was a stationary wooden shed of use only as a base hospital, because it could not have been moved had the Division been ordered to the border. When the building was up and ready for the reception of sick horses, it was found that veterinary medicines and instruments for such a hospital and for the large number of animals in camp had not been considered beforehand, and an emergency supply had to be borrowed from the Post at Fort Sam Houston in order to commence treatment for which there was immediate need. Medicines and supplies for 500 horses for three months finally arrived on April 2d, but these had been selected at random and without the least knowledge of the needs of veterinary treatment in the field service. Yet, crude as the Division Veterinary Hospital was in design, equipment and in facilities for certain necessary work, mediocre as were further the services of some of the six civilian veterinarians, who had been employed specially for duty at this hospital, this infant institution acted at once as a buffer against the dissemination of shipping fever and strangles among the picket lines of the various commands, and this at a time when the climatic conditions were most favorable for a spread of this kind of diseases This one result obtained was soon recognized by those officers who took an interest in the general working and improvements instituted at this camp, and the Division Veterinary Hospital was thereafter looked upon as a necessary, useful and economic feature of the camp, that could save to the government thousands of dollars worth of horses and greatly assist in preserving the health and serviceability of all animals in the camp. During the eight working months of this hospital, 562 horses and mules were treated therein, and it cannot but be instructive to give the following summary of the kind of diseases and injuries encountered at this camp, as extracted from the record book of the hospital:

DISEASES TREATED.

20 cases
6 cases
4 cases
4 cases
201 cases

INJURIES TREATED.		
Hoof lameness	98	cases.
Nail pricks	. 79	cases.
Sprains	65	cases.
Rope burns		cases.
Sore backs and shoulders		cases.
Lameness from spavin, ringbone, sidebone	21	cases.
Kicks and bites	16	cases.
Abnormal teeth	4	cases.
	361	cases.
Total	562	cases.

The mortality at the hospital was as follows:

17 horses died of shipping fever.

2 mules died of pneumonia.

5 horses died of colic.

6 mules died of colic.

 $8\ horses$ and mules were destroyed by action of Inspector General. $(A.\ R.)$

Total 29 animals; percentage of mortality 51/6%.

Two or three other animals died unrecorded at the picket lines in the early stages of the camp, but it is safe to estimate, that the grand total of loss by death among the 6,000 animals did not exceed one half of one per cent. There were no records kept of the hundreds of cases of diseases and injuries treated at the picket lines by the veterinarians of the mounted regiments. This is an opportunity to state that no Veterinary records

are kept and collected in our army, so that we have remained innocent of the knowledge of the class of diseases and injuries that cause losses among our horses from death or which render them temporarily or permanently unserviceable. Most of our Veterinarians in the regular service keep such records at their posts, but they remain uncollected and unsummarized, because there are no veterinarians designated to compile them into a report, which would be so instructive for the army at large.

The next progress made at the Maneuver Division was the precaution taken to prevent the infection of horses with glanders. No case of this disease appeared at this camp, notwithstanding the fact that glanders is stationary in and around the city of San, Antonio. Again this was due to the action of the General Commanding, who directed that all horses entering the camp, mainly horses hired temporarily from the city by the officers of the National Guards, should be carefully examined at the Division Veterinary Hospital; that suspects be rejected, and that the passed horses should be kept under vigilant observation while at the picket lines. This examination was also performed by the civilian veterinarians at the hospital, and in addition the General instructed an available veterinarian of the regular service to supervise this measure and to see to it that the sanitary methods introduced at this camp to prevent and check communicable diseases among the horses and mules were promptly and intelligently carried out, and to report to him any infringement of the same. It is only just to state that such a report became never necessary, because the officers responsible for horses and mules, often unacquainted with a proper care of animals in the field, accepted cheerfully any and all advice given to them, anxiously asked for further information along this line, and promptly carried out any recommendation made.

Little need to be said about the routine care of the horses of the mounted regiments. On arrival, they quietly took possession of the place alloted to them in the camp, pitched tents and stretched picket lines, and then went about their business in the manner learned in our regular marches and maneuvers. Their horses were in good condition, free from diseases and they appeared perfectly content with the life at the picket lines.

There was the usual hustle of men about the horses, picket lines and saddle racks, all so pleasing to the eye of the old soldier. To observe the thousands of serviceable horses of the two cavalry regiments and the two Field Artillery Regiments camping together in a limited space, was certainly an impressive sight.

All would have remained well for our horses, had not one phase of the Kriegsspiel been overlooked in Washington: The heavens that make storms, that drop the mercury in the thermometer, and force the finger of the barometer towards the nautical term "threatening." The regiments from the north and east had been told that Texas possesses a balmy, subtropical climate, so most of the men arrived in summer clothing and the canvas horse covers had been left at home by several regiments. But the months of March and April were exceptional as to metereological disturbances in Texas, not remembered by the proverbial oldest inhabitant and the discomfort occasioned to men and horses by the chilly air, incessant cold rain, and by the thoroughly soaked soil which formed seas of mud here and there, was about as trying as many old campaigners had experienced.

Of course our horses suffered on the picket lines. The men had shelter, the horses had none. The absence of the blanket-lined horse covers as regularly issued, was a great mistake, because these would have acted at least as warm clothing and rain cover combined. As a result, shivering horses and mules could be seen everywhere, many horses were coughing and the farriers and wagon masters reported cases of thrush, greased heels, and most of the other ailments that come from inclement weather and from the muddy ground on the picket lines.

Then the counting of the veterinarians began. For the needs of the 12,000 men, there were fourteen chaplains and swarms of surgeons, perhaps all needed in a future war. But there were only three Veterinarians with the four mounted regiments when there should have been eight as allowed by law, and when Eupopean armies would have provided from twenty-five to thirty veterinary officers as a proportionate number to attend to 6,000 animals. This insufficiency in the number of veterinarians caused by vacancies and detail, was

very evident. Yet, some officers, interested in the reorganization of the cavalry regiments, proposed almost at the same time to reduce the two veterinarians in the regiment to one. It seems impossible, that experienced military men should have overlooked the lesson learned at Chickamagua Park in 1898, nor could they have forgotten the need of veterinarians in the Philippine campaign, when glanders, surra and epizootic lymphangitis decimated the cavalry. Who originated such a recommendation is not known, but perhaps a wish to overcome expense in the direction of the least individual resistance may explain much. The result would be disaster from an inexcusable loss of horses in the next war.

Neither was there an abatement in the need of veterinary attendance, when the inclement spring weather had spent its force and the hot and dry summer had set in to stay. Eye diseases, caused by the exposure of horses to the glare of the sun and dust, and several forms of skin diseases indigenous to Texas, attacked the unacclimated animals. While there was no great harm done by them, the large sick list annoyed the officers, kept the veterinarians busy, and called for extra work and the ingenuity of enlisted men to improvise shelter for the horses, made of mesquite brush, to break the intensity of the rays of the sun.

It was about this time that the Humane Society of San Antonio appeared on the scene. They waited on the Commanding General, submitted their complaint of "cruelty to animals" from absence of shelter, and made suggestions. Instead of objecting to the interference of these "good and well meaning people," as had previously been done by officers under similar circumstances, their claim was wisely concurred in, and money was promptly secured for the building of wooden sheds for all animals in camp. Again this seems to be a new record of the Maneuver Division in the care of animals at a stationary camp, and one which every officer should approve, not only as humane but in the interest of economy.

Much good resulted for our horses from the comprehensive sanitary methods employed in this camp by the Medical Department. The war declared against the fly nuisance by burning the refuse matter around the kitchens, latrines and on the picket lines, was entirely successful. The method of burn-

ing the incollectable parts of hay and manure right on the ground of the picket lines after previously saturating them with crude oil, killed not only the larvae of the flies and kept the ground free from smell, but actually resulted in many instances in converting the mud into solid soil.

As far as the general care of sick animals is concerned, quite an improvement against former times was noticeable. The new method of treating suppurative injuries with bacterin was tried in camp and found to be a great advance. Three hundred doses of bacterin were supplied by the veterinary laboratory of the Mounted Service School at Fort Riley. In the recollection of the writer, covering a period of twentyseven years, this was the first instance in which a systematic veterinary service has been inaugurated in a larger part of our army assembled in camp. It was entirely due to the unceasing supervision of the Commanding General over all matters pertaining to the care, comfort and safeguarding of horses. As the author of our military text-book on hippology he has shown, that he cannot only teach theoretical lessons, but can well apply them in practice. He was easily approachable to the veterinarians, quickly approved proper recommendations and encouraged initiative. Those of us who were so fortunate to serve at this camp, cannot help but carry with them new inspirations for their work, and gain renewed hope, that the good results obtained by the veterinary measures introduced at this camp, must finally convince the War Department, that a properly officered, equipped and up to date Veterinary Corps for our army will not only be an economical measure but one of justice to the veterinarians of our service as well.

VETERINARY SERVICE RECOMMENDED FOR A DIVISION COMPLETE.

The Field Service Regulations, United States Army, 1910, do not provide for an organized veterinary service for our mobile army or parts of it. Neither exists such in peace organization, as the forty-two veterinarians of Cavalry and Field Artillery provided by law, have no professional supervision, advice or direction. The Quartermaster General is authorized by law to engage as many civilian contract veterinarians as may be

needed for his department or other departments and corps. The Field Service Regulations provide for six contract veterinarians for a complete Division.

While the veterinary service at the Maneuver Division performed a large amount of work, it was still inadequate by reason of the insufficient number of veterinarians with the cavalry and artillery regiments, and from the inferior quality of the contract veterinarians engaged.

The following veterinary organization for a complete division, is recommended for mobilization. Under the present law it can only be arranged by detail of veterinarians of cavalry and Field Artillery for the most responsible positions.

- 1. Division Headquarters. One acting chief veterinarian to be selected from the Cavalry and Field Artillery; should have over fifteen years of service, to have general supervision of the veterinary service of the mounted organizations, the Field Veterinary Hospital and the measures taken to prevent communicable diseases among the animals in camp; to keep himself thoroughly informed of the health, serviceability and marching power of riding horses and draft animals; to keep a general record of diseases and death of animals in camp. (Information along this line was frequently asked of veterinarians in camp.)
- 2. Service with the mounted regiments. One additional veterinarian to be detailed for service with the third squadron of each regiment of cavalry. (It is not probable that two veterinarians can properly attend to over 1,200 horses in field service even in the most superficial manner. Several complaints about the shortage of veterinarians were made in camp.)
- 3. Field Veterinary Hospital. Building to be a movab'e structure with capacity for 100 horses. Recommended that the frame consists of piping, united by joints, to be covered by paulins provided with hooks. If made to be ready for issue, such a structure can be mounted within a few hours; it can be divided into sections for fifty horses or twenty-five horses, as needed for advance, and can be carried by ordinary transportation.

Personnel:—One veterinarian in charge to be detailed from the Cavalry or Field Artillery regiments; should have over ten years of service; to supervise treatment and sanitation at the Field Veterinary Hospital, and be responsible for the administration, the supply and issue of medicines and proper records of the hospital. Six civilian contract veterinarians, assistants, as provided for in the Field Service Regulations, 1910.

4. Field Shoeing Shop. For horses of the Division Headquarters, Infantry regiments, Batallion of Engineers, Signal Corps companies, and Quartermaster transportation animals.

Personnel:—One veterinarian in charge, to be detailed from the Cavalry or Field Artillery regiments; to be responsible for the administration, proper supply of shoes and tools, good workmanship, humane treatment of animals at the shop, and record of animals shod. Twelve horseshoers; six as iron workers and six as shoers.

Building:—A movable structure with a capacity for six forges and six to eight horses. Recommended to be of the same structure as the Field Veterinary Hospital. This field shoeing shop does not include the blacksmith of the Quartermaster's Department for repair of wagons, etc.

SHELBY'S EXPEDITION TO MEXICO.

AN UNWRITTEN LEAF OF THE CIVIL WAR.

A REVIEW OF AN OUT OF PRINT BOOK.*

THOSE who desire to know what can be done by one man in time of stress will be rewarded by reading John N. Edward's books about Shelby. His first book is called "Shelby and His Men," and is a very interesting history of that famous Trans-Mississippi organization. His other book bears the above title and a brief of this volume is given here. Both of these books are of gerat interest to cavalrymen.

*During the Maneuver Division's stay in Texas last summer, on several occasions a tall distinguished looking old gentleman was seen bringing deserters into camp. On one of these occasions he brought a man to the Eleventh Cavalry and while waiting for the routine papers to be made out he entered into conversation with the Regimental Commander, Colonel James Parker. From his appearance Colonel Parker's first were words correct: "You are not new to this business of soldiering?" "No," he replied, "I was at it for some time some years ago. I was with Shelby and went with him to Mexico. He stayed for dinner on the Colonel's invitation and his talk of Shelby's trip through Mexico proved so entertaining that he said he would send down a history of that march for the perusal of the officers of the Eleventh Cavalry.

The author, John N. Edwards, was for years an editorial writer on he Kansas City Times. He died some time in the early nineties. While the style is very flowery yet there are so many lessons of war contained in the volume and the power of one man's personality is so vividly portrayed, that men of action should spend a few hours reading over this unwritten leaf. There is much information that will be found no where else. "Shelby and His Men" will be found in most well stocked libraries but the Expedition to Mexico has become a rare book. I was able to find only one copy at Lowdermilks and I believe there is not another copy for sale in the City of Washington. The book is now out of print.

The old gentleman who was responsible for the interest taken in Shelby's trip was one of the men who went with that restless man to Mexico. His name is John Kritzer, and is far from absent in the pages of Edward's ancedote. Kritzer is today still an active man and holds the position of City Marshal of Taylor, Texas.

Shelby's division of Missourians was the flower of the Trans-Mississippi Department. He had formed and fashioned that division upon an ideal of his own. He had a maxim, borrowed from Napoleon without knowing it, which was, "Young men for war." Hence all that long list of boy heroes who died from Pocahontas, Arkansas to Newtonia, Missouri. As Pocahontas was nearly the first battle fought west of the Mississippi, so Newtonia was the last. Newtonia was a prairie fight, stern, unforgiving, bloody beyond all comparison for the stakes at issue, fought far into the night, and won by him who had won so many battles before that he had forgotten to count them. General Blunt, for years afterwards a happy citizen of Kansas, often gave testimony that Shelby's fighting at Newtonia, surpassed any he had ever seen. But the war was drawing to a close and the retreat after Newtonia was a necessity.

After the ill-starred expedition into Missouri in '64 the Trans-Mississippi farce went to sleep. It numbered about fifty thousand soldiers, rank and file, and had French muskets, French cannon, French ammunition, French medicines and French gold. General E. Kirby Smith was the Commanderin-Chief of this Department and had under him as lieutenants Generals John B. Magruder and Simon P. Buckner. At the time of Lee's surrender the Trans-Mississippi army was scattered throughout Texas, Arkansas and Louisiana. At the news of the surrender it began to concentrate by intuition. A conference was ordered for the leaders at Marshall, Texas. Smith came up from Shrevesport, Shelby came from Fulton, Arkansas. Hither came also Hawthorne, Buckner, Preston, Walker and Reynolds. Magruder remained at Galveston watching a Federal fleet beating in from the gulf.

The soldiers had held a meeting pleading against surrender. Jefferson Davis was a fugitive, bound westward. Texas was filled to overflowing with all kinds of supplies and ammunition. The soldiers still believed the struggle could be maintained. So the Marshall conference was to provide against the necessity of surrender. Strange things happened at this conference. Old heads came to young ones; the infantry yielded its preference to the cavalry; the Major-General asked advice of the

Brigadier. There was no rank beyond that of daring and genius. Shelby was the first speaker and in few words said

substantially the following:

"We should concentrate everything upon the Brazos River. Fugitives from Lee and Johnson will join us by thousands; Mr. Davis is on his way here. Our intercourse with the French is perfect. Fifty thousand men have ere now overthrown a dynasty and founded a kingdom. Every step to the Rio Grande must be fought over and when the last blow has been struck that can be struck, we will march into Mexico and re-instate Juarez or espouse Maxmillian. General Preston should go at once to Marshal Bazaine (in Mexico) and learn from him whether it is peace or war. Surrender is a word neither myself nor my Division understands."

Smith with his own consent was replaced by Buckner. The conference broke up. Preston started for Mexico and Bazaine, Shelby to his troops on the prairies about Kaufman. But before reaching them news came to him that Smith had resumed command and surrender was the order. Shelby resolved at once to seize Shrevesport and the government, and carry out the plan of the conference. But in his march from Kaufman to Corsicana he was delayed by one of the worst storms that ever inundated even Texas. And when he reached the latter place many surrenders had taken place at Shrevesport and the war was over. Shelby's undaunted spirit still wanted to make the attempt but the danger that might arise to those already surrendered prevented any such action.

So one bright morning when the sun once more appeared, when the waters had subsided and the green and undulating grasses wafted soft odors, Shelby's Missouri Cavalry Division came forth from its bivouac for the last time. A call ran down its ranks for volunteers for Mexico. One thousand bronzed soldiers rode to the front and ranged themselves two and two behind their leader. Good-byes and partings followed and the long march to Mexico City was begun.

At this time Texas was a vast arsenal. Magnificent batteries of French artillery stood abandoned on the prairies. Those who had surrendered them took the horses but left the guns. Imported muskets were in all the towns and of fixed

ammunition there was no limit. Ten beautiful Napoleon guns were brought into camp and confiscated. Each gun had six magnificent horses and six hundred rounds of shell and canister. An election was held and Shelby was made Colonel. Men who had been majors came down to corporals and many who had been lieutenants went up to majors. As for ammunition, for each carbine, and every soldier had one, there were forty rounds and three hundred more in the wagons. Each man had four Colt's pistols with ten thousand rounds apiece and a heavy regulation saber. In the wagons there were powder, lead and bullet moulds and six thousand new Enfields, just landed from England with the Queen's arms still on them. Wagons were plentiful and so in addition to all the above flour and bacon were carried. The quantities were limited entirely by the anticipated demand, and for the first time in its history, the Confederacy was lavish of its commissary stores,

But the march through Texas was somewhat delayed by the wonderful work of Shelby preserving peace in the State. Refugees and renegades began to lift up their heads everywhere as soon as the war was over. Stores and lives and property at Houston, Tyler, Waxahatchie were saved by the prompt action of Shelby's detachments. And so great was his work in this direction that his march through the State became an ovation. Women and children rose up to call him blessed. It seems strange that so youthful a commander could have instilled into his force such rigid ideas of discipline. Certainly old Cromwell's Ironsides with their God fearing ideas and their psalm singing evenings could have been no greater blessing to the people of the State of Texas than were Shelby and his men at this particular time.

In time Austin was reached. Governor Murray still remained at the capital of his State. He had been dying for a year with consumption. He knew death was near to him, yet he put on his old gray uniform and mounted his old tried war horse and rode away dying into Mexico. Later in Monterey the red in his cheeks had burned itself out. The Crimson had turned to ashen gray. He was dead with his uniform around him.

Scattered all over the State were fugitives struggling to reach Shelby. Of these the following names will give an idea of the general character of such fugitives. They were of the idea that the whole power of the United States Government was bent upon their capture. Talking not long ago with General Powell Clayton, he said: "At that time many had an idea that the Government would deal harshly with the leaders of the rebellion. Of course no one at the North had such ideas." This may explain somewhat the number and character of the men that had fled to Texas at that time. Kirby Smith was there and so were the following: Magruder, Reynolds, (Governor of Missouri), Parsons, Standish, Conroy, General Lyon of Kentucky, Flournoy, Terrell, Clark, Snead of Texas, John B. Clark, Prevost, Governor Allen, Commodore Maury, General Bee, Watkins, Broadwell, Wilks, and a host of others, equally determined on fight and flight and equally out at the elbows. Of money they had scarcely fifty dollars to the man.

San Antonio, in the full drift of the tide which flowed in from Mexico was first an island and afterwards an oasis. To the soldiers of Shelby's expedition it was a paradise. Mingo, the unparlleled host of Mingo's Hotel (now called the Menger) was the guardian angel. Here everything that European markets could afford was found in abundance. But the streets soon became dangerous with desperadoes. But on Shelby's arrival discipline arrayed itself. His patrols paraded the streets and sentinels stood at the corners. All during his stay in that

city it was protected and peace reigned.

Soon the march was taken up for Eagle Pass. Some days after leaving San Antonio Shelby was informed by his rear guard that a federal force of 3,000 men with a six gun battery was marching to overtake the column. Shelby halted and sent back the following note to the federal Commander, Colonel Johnson: "Colonel:—My scouts inform me that you have about three thousand men and that you are looking for me. I have only one thousand men and yet I should like to make your acquaintance. I will probably march from my present camp about ten miles further today, halting on the high road between San Antonio and Eagle Pass. Should you desire to pay me a visit you will find me at home until day after tomorrow.—Shelby."

Johnson received the messenger and dismissed him with promises to be present. But he never came. After all he, may have been right. The war was over and the lives of several hundred men were in his keeping. Shelby waited for him as he said he would but on finding Johnson indisposed to risk the gage he reluctantly moved on. On nearing Eagle Pass he charged a band of renegades and cut throats that had robbed some stores. He killed most of them, and turned over the stores to the families of confederate soldiers. When three days out from Eagle Pass, Smith expressed a desire to proceed to that place and not wait for the march of the column. Shelby gave him an escort and with Smith went Magruder, Prevost, Wilcox, Bee and a score of others who had business with certain French and Mexican officers at Piedras Negras and other places.

Piedras Negras was held by 2,000 Mexican soldiers, followers of Juarez. The commander was Governor Biesca, of the State of Coahuila, half soldier and half civilian, and a man of elegant and polished manners. Shelby held a long interview with him. To understand thoroughly what followed some little unwritten history of the war must be given. Some time before Abraham Lincoln was assassinated he had caused a notice to be delivered to certain of the Confederate Commanders. This notice came to Shelby through General Frank P. Blair. It was to this effect:

"The struggle will soon be over. Overwhelmed by the immense resources of the United States, the Southern Government is on the eve of utter collapse. There will be a million of men disbanded who have been inured to the license and the passions of war, and who may be troublesome if nothing more. An open road will be left through Texas for all who may wish to enter Mexico. The Confederates can take with them a portion or all of the arms and war munitions now held by them, and when the days of their enlistment are over such Federal soldiers as may desire shall also be permitted to join the Confederates across the Rio Grande, uniting afterwards in an effort to drive out the French and re-establish Juarez and the Republic."

Such guarantees had Shelby received and while on the march from Corsicana to Eagle Pass a multitude of messages overtook him from Federal regiments and brigades begging him to await their arrival, a period made dependent upon their disbandment. Governor Biesca exhibited to Shelby his authority as Governor of Coahuila and as Commander-in-Chief of Coahuila, Tamaulipas and Neuva Leon, and offered Shelby the military control of these three states, retaining himself only the civil. He required of him but one thing, free and energetic support of Juarez. He suggested also that Shelby should remain for several months at Piedras Negras recruiting his regiment up to a division and when he felt himself sufficiently strong he should move against Monterey, held by General Jeanningros of the Third French Zouaves and some 2,000 soldiers of the Foreign Legion.

This picture as painted by the Mexican was a most attractive one and one far from being a dream. Had the men decided to accept the Mexican's offer no one can tell but that Mexican history might have been greatly changed. But Shelby put the proposition to his men. After long and earnest council the men decided in favor of their friends, the French. After the conference closed, Shelby said: "Poor fellows, it is principle with them." Biesca, when informed of the decision was greatly amazed and disappointed but at once made an offer to purchase the arms. This was finally arranged an levys were made by the Mexican Governor which raised \$16,-000. One reason for this sale, if not the only reason, was that the country between Piedras Negras and Monterey was almost a wilderness, a kind of debatable ground; the robbers had raided it, the liberals had plundered it and the French had desolated it. As Shelby was to pass over it he could not carry with him his teams, his wagons, his artillery and his supply trains. Besides he had no money to buy food and as it had been decided to abandon Juarez it was no longer necessary to retain the war material.

On the march south to Monterey an ambush was laid by the Lipan Indians at the Salinas (Sabinas). Of the 700 who attempted the ambush 200 lay dead and unburied in the chapparal when Shelby was finished with the matter. But unfortunately twenty-seven of Shelby's men were killed and thirty-seven were wounded. These latter needed attention. They could not be abandoned, so the march on was necessarily slow. The column was constantly subjected to ambush and quite a number of Mexican guerrilas came to the last of their days in a skirmish two days out from Lampasas from a pistol charge by some of Shelby's men.

From Lampasas the march kept up till within one or two miles of Monterey. Here was General Jeanningros with a number of soldiers of the Foreign Legion. Some say he had 2,000, others say 5,000. The fact of the sale of the guns and ammunition to the Mexicans filled Jeanningros with the intention of hanging the Americans when they came into his power. When Shelby reached his place so near the city he sent the following letter to Jeanningros:

"General Jeanningros, Commander of Monterey: General:

"I have the honor to report that I am within one mile of your fortifications with my command. Preferring exile to surrender I have left my own country to seek service in that held by His Imperial Majesty, Emperor Maximilian. Shall it be peace or war between us? If the former, and with your permission, I shall enter your lines at once, claiming at your hands that courtesy due from one soldier to another. If the latter, I propose to attack you immediately,

"Very Respectfully Yours, "Jo. O. Shelby."

Jeanningros, used all his life to surprises, was attracted by the soldierly daring and supreme nerve of this letter. He replied to the bearer, "Tell your General to march in immediately. He is the only soldier that has yet come out of Yankeedom." His reception was a frank and open as his speech. That night he gave a banquet to the officers and among those present were Magruder, Polk, Reynolds, Hindman, Clark, Kirby Smith, Shelby and many others.

During the stay in Monterey Shelby obtained permission from Jeanningros to proceed to the Pacific. It was his idea to get a port on that coast as a base of operations and draw recruits from California and so get an army that would be capable of keeping Maximilian on the throne of Mexico after France withdrew her forces. So the force started for the Pacific by way of Saltillo. It moved on to Parras where Shelby intended to rest a few says. But he got into a row with the French Colonel there, who was drunk when Shelby came in. Shelby called him a coward to his face and a duel was arranged. The Frenchman, chivalrous though drunk, chose pistols as Shelby's right hand and arm were not in a condition for a sword contest, due to wounds not yet fully healed. But the duel never took place. That evening Jeanningros came in to Parras on a tour of inspection and the matter ended by the Colonel apologizing to Shelby. Later, during the Mexican trouble, Shelby rode 162 miles in twenty-six hours to save this Colonel's life. I am not giving this distance and time as authoritative, but the figures are exactly as the author gives them.

The Colonel at Parras had an order from Bazaine that the Americans should not be allowed to proceed to the Pacific but should be sent at once to Mexico City; if they refused to return to their own country. There was nothing left but to obey. The command then turned southward and passed through Encarnacion to Matehuala. At the latter place 500 French under Major Pierron were being besieged by about 2,000 Mexicans. Shelby made his dispositions and charged the Mexicans, routing them and winning the undying gratitude of the French. From Matehuala he moved on south through San Miguel and on to San Luis Potosi.

General Felix Douay held San Potosi, the great granary of Mexico. It was a brother of this Douay who, surrendered and abandoned at Weissembourg, marched alone and on foot toward the enemy until a Prussian bullet found his heart. Older and calmer, and perhaps wiser than his brother, General Felix Douay was the strong right arm of Bazaine and of Maximilian. After assigning quarters to Shelby's men he had a direct talk with him. Douay immediately conceived the scheme of using Shelby's force to clear the country from San Luis Potosi to Tampico, a job from which few had ever returned alive, due to the swamps and malaria. But Douay believed Shelby could clear the section which at that time was kept in turmoil by a noted bandit, Figueroa. He kept Shelby

at San Luis Potosi till he could communicate with Bazaine in Mexico City. The messenger returned with orders to send the Americans immediately on to Mexico City.

Douay gave the men rations and wine and wished them God speed. He clearly saw that the auspicious moments during which an American force could be recruited that would keep Maximilian on the throne were fast slipping away. But being a soldier he obeyed and offered no suggestions to the Austrian Emperor. Shelby pushed on to Quaretero, on into the glorious land between that city and the Mexican Capitol, no longer beset by guerrilas for the French were everywhere. Finally the City of Mexico was reached.

An interview was arranged with Maximilian. Shelby spoke as follows: "My plan is to take immediate service in your empire, recruit a corps of 40,000 Americans, supercede as far as possible the native troops in your army, consolidate the government against the time of the French withdrawal, encourage immigration in every possible manner, develop the resources of the country and hold it until the people become reconciled to the change, with a strong and well organized army." There were present at this interview, Bazaine, Count de Noue (son-in-law of General Harney), Magruder and Commodore Maury. But Maximilian declined. He was not willing to trust the Americans in an organization so large and so complete. Moreover he had ideas that negotiations with Seward could still be effected and so by this refusal set out upon the road that led to his death and for his wife to the insane asylum.

The band now began to break up. A few moved toward the Pacific where what was left of them took passage for San Francisco, China, Japan, and the Sandwich Islands. A few started off for the fabled island in the Pacific that contained Captain Kidd's treasure. Those that ever returned from this trip later took service in the Imperial Army in Sonora. Some fifty took service in the Third Zouaves, selecting that regiment because the men in that organization did not remove their hats to salute. Most of the rest moved to the American colony of Carlotta, near Cordova and took up various lines of activity. Some started saw-mills, some raising cotton. Hindman mas-

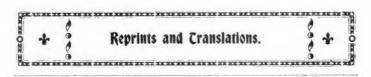
tered Spanish in three months and started practicing law. General Stevens, Chief Engineer of Lee's Staff, was made chief engineer of the Mexican Imperial Railway. Reynolds was made superintendent of railroads. Shelby became a freight contractor and established a line of wagons from Paso de Maco to the Capitol. And so they passed out of military history. Shelby afterwards returned to the United States and became an U. S. marshal in western Missouri living to a good age.

The rest of this volume is devoted to a history of Maximilian and his Queen, Carlotta. There is no better history of this sad story, and one closes the book with tears over the sad fate of the mad Empress, who still lives in the insane hospital and dreams of the time when the young Austrian came

a'wooing and of the salons and waters of Miramar.

All cavalrymen should read this book if ever opportunity offers. The character of Shelby is one from which a man of action can draw inspiration. For after all, action is the main thing, others are incidentals.

WHITE.



AIRSHIPS AND CAVALRY IN THE RECONNAISSANCE SERVICE.*

BY CAPTAIN NIEMANN, AUSTRIAN CAVALRY.

BY furnishing timely information to both army headquarters during the recent Imperial maneuvers, airships have proved their suitability in the reconnaissance service; however, the weather conditions were so ideal that we can not say with absolute certainty that their exclusive use in the reconnaissance service will hereafter be resorted to.

We read reports almost daily of the remarable porgress made in æronautics. The new Zeppelin "Schwaben" made one hundred rips within the last three and one-half months and covered a total of 12,460 kilometers. Of course, the balloon is still dependent on its hanger, but the airship may be taken along any place by higher headquarters. Undoubtedly great progress will be made in the near future in both balloons and airships and increase the feasibility of their use.

All this leads to the question: Can we dispense with independent cavalry in the reconnaissance service and utilize the divisional cavalry for messenger service only?

Theoretically considered we concede that airships can transmit information concerning the enemy far quicker and more complete than can the best organized and equipped reconnoitering cavalry, for airships can travel from 80 to 100 kilometers per hour, can observe a large section of terrain,

^{*}Translated from Kavalleristische Monatshefte, January, 1912, by M. S. E. Harry Bell, U. S. Army.

have an unobstructed view into depressions and valleys, over village streets and roads and even into forests, if not too dense. Nevertheless even the most enthusiastic supporter of air craft for reconnoitering purposes must concede that it will require a combination of favorable circumstances and weather conditions to make the airshipor balloon an absolutely certain means of reconnaissance. Thick weather, fog, rain and snow, thunderstorms, heavy equinoctial gales will always remain serious obstacles, if not impossible ones, to overcome by a reconnoitering air-craft. Movements of armies and changes of positions of troops made during twilight and night can never be observed and reported by air-craft.

The greater the success attained in giving stability to aircrafts, the more numerous the supply of these with an army, the greater will be the endeavor to battle against them. battle will be carried on not only from terra firma but also in the air itself, the latter method possibly becoming predominant. Equipping airships with fire-arms and explosives to combat each other is merely a question of time. Trials are now being made of the feasibility of having an airship ascend above a balloon and destroy the latter by means of droppping explosive projectiles. However, our new "Zeppelin No. 9" has shown that without throwing out any ballast it can ascend 1,350 meters within ten minutes, while during the same time the airship can ascend but 500 meters. It cannot be said in advance whether in an engagement of this kind the airship or the balloon would be victor; but so much is certain: the battle in the air is no illusion; it is a factor which we will have to take into consideration, a factor which decreases the certainty of reconnaissance by ærial means.

On the other hand, cavalry reconnaissance, well planned and executed by thoroughly trained troops, will undoubtedly furnish the commander-in-chief with absolutely reliable information, assuring complete freedom to the commander in operative and tactical matters and giving him a clear conception of the entire situation. Cavalry reconnaissance provides zones of absolute security in front and on the flank and s a means at the disposition of the commander to prevent

undesirable surprises and take advantage of discerned weak spots in the hostile grouping of troops.

Air craft is an elongated eye of the commander of the army and troops of undoubted and inestimable value; but cavalry in close touch with the enemy is an elongation of his arm, which can not only feel but also strike while feeling.

Each and every type of air-craft may always have one great defect, *i. e.* uncertainty of motive power; cavalry can never have that defect. Imagine the case that air-craft has reported to the commander the movements of a far off opponent and suddenly ceases to send reports because something went wrong with the motive power; what is the commander to do f he has no cavalry out on reconnaissance?

Even if we can count on the probability that air ships will in future succeed in ascertaining the hostile grouping of troops earlier and more correctly than has heretofore been the case in cavalry reconnaissance, the difficulties of operative and tactical leadership are not altogether overcome thereby by any manner of means. Weak spots in our own grouping of troops will be known to the enemy earlier and will be quicker utilized. The enemy will have the advantage of sooner discerning movements directed against his weak spots and taking proper counter measures. Both sides of course can utilize darkness in making changes of position when contact with the enemy is imminent. When contact is not imminent, however, night marches executed by larger bodies of troops promise no material success as far as secrecy is concerned; the first ray of sunlight will reveal what has been done during the night.

All intended surprises, whether based on offensive or defensive decision, will require an increased celerity of executuion a celerity inherent only to cavalry. A prerequisite of cavalry success always is superiority in numbers over the hostile cavalry, for this will assure the necessary freedom of movement; another prerequisite is that the cavalry is in close touch with the enemy and knows, from personal observation, conditions obtaining with the enemy whom it will often have to combat far from support of its own army.

The impossibility, existing heretofore, of ascertaining the enemy's march into position by cavalry reconnaissance pure

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and simple frequently compelled us to decentralize the independent cavalry bodies. Should we at the present day succeed in reconnoitering the hostile march into position by means of air-craft the independent cavalry can be consolidated into groups to take advantage of the results of the ærial reconnaissance. Field Service Regulations (paragraph 137) requires that "reconnaissance should not be carried out merely in the direction where the enemy is known to be, but under certain circumstances in other directions, in which he might possibly appear." This requirement would no longer continue in force if ærial scouts have once made one successful trip and we would be able to consolidate a strong cavalry force just there where battle tasks are to be solved. It may be objected that the fighting power of cavalry is too small when opposed to detachments of all arms. To this we would say that we can easily increase the fighting power of our cavalry by attaching numerous cyclists to it: and what should hinder us from reinforcing our cavalry divisions, in so far as they are permanently superior to the hostile cavalry divisions, by numerous artillery and machine gun organizations and thus transform them into competent battle units?

Reconnoitering cavalry, either independent or divisional, will profit greatly by the achievements of air ships. Where its task is to cross occupied sectors and to drive back hostile advance troops, the air ships will show the route to be taken and save the cavalry many a bloody or even useless dismounted action. Based on the results obtained by ærial reconnaissance the cavalry may frequently be able to utilize the night to create for itself conditions favoring an unexpected appearance the succeeding day. The cavalry will be relieved from any onerous reconnoitering duties by ærial vehicles, especially during the march into position, during attack and defense of stream sectors and defiles, attack on permanent fortifications and the reconnoitering of hidden artillery groups and reserves behind the center of the extended hostile battle front. But we must always hold to the maxim that where the decisive operation is to be had we cannot do without an effective cavalry body which keeps in close touch with the enemy and that at the moment of tactical contact a permanent cavalry reconnaissance of the enemy is absolutely necessary. Aerial navigation can supplement cavalry reconnaissance in the most effective manner; points out the limits to which it can proceed in the reconnaissance profitably, and gives our large independent cavalry bodies an increased importance. The natural consequence of these facts seems that we ought to increase our cavalry and make our cavalry divisions stronger as far as their fighting power is concerned.

There are several new points which should be considered in giving orders for reconnaissance to the cavalry. That cavalry and air-craft must work hand in hand is obvious; this will be best accomplished by attaching flying machines to the different cavalry bodies. We must further be able to transmit the results of the ærial reconnaissance quickly to all organs of the far reconnaissance and must always have the means at hand to change the direction of reconnaissance and operation without loss of time or force. This will be practicable only if we take proper steps to permanently connect all parts of the reconnaissance net and avoid a too much extended formation either in breadth or depth.

The possibility of extensive changes in the position of troops during the night when tactical contact is imminent or has been had, compels us to give greater attention to the reconnaissance at night and to look for means to carry that out in a proper manner. Therefore night marches of larger cavalry bodies carried out without friction, should be made the subject of studies, both theoretical and practical, and through such study we must find out in how far we can transform a massed body of independent cavalry quickly into an efficient and independent battle unit.

TACTICS

BY

BALCK

Colonel, German Army.

VOLUME II.

CAVALRY, FIELD AND HEAVY ARTILLERY IN FIELD WARFARE.

AUTHORIZED TRANSLATION FROM THE GERMAN

BY

WALTER KRUEGER,

First Lieutenant, Infantry, U. S. Army, Instructor Army Service Schools.

FOURTH ENLARGED AND COMPLETELY REVISED EDITION.

The following pages are from the advance sheets of a forthcoming work of which the above is the title.

Continued from page 765 of the January number of the Cavairy Journal.

II. THE FORMATIONS.

In the cavalry—thorough training of trooper and horse, good mounts and good morale being presupposed-combat efficiency depends to a greater extent upon tactical formations than in the infantry. The rapid course of a mounted action makes it impossible to give detailed instructions for its execution. The leader must, in many cases, content himself with simply calling out his directions. In the infantry and, to a more limited extent, in the artillery, it is practicable to correct errors in the plan of action, at least during the preliminary stage. In a cavalry action, however, it is seldom possible to make a change in movements once begun. Everything depends upon making the tactical formations fit the particular situation, and upon accustoming the troops, in time of peace, to that which promises success in battle. Formations that can not be employed in face of the enemy are superfluous. In the cavalry, more than in any other arm, all doubts as to the general principles of combat and as to the formations to be employed in action must be precluded. This is the function of drill regulations. The authorized drill regulations are the basis upon which the independent judgment of subordinate leaders must be developed, for it will depend upon their prompt and correct judgment whether, during unexpected developments in a fight, the proper action is taken. On account of the rapidity with which events occur in a mounted action, an interference on the part of the superior commander during the fight, is almost wholly precluded. Even when launching his organization into action, it will not always be possible for a commander to see everything sufficiently well from one point to

enable him to assign definite tasks to his subordinate leaders. Frequently, the superior commander will be able to control even the reserves to a limited extent only.

1. THE ESCADRON.*

The escadron, whether regularly formed or not, must be able to execute quickly and with precision, under all conditions and on any terrain, all movements prescribed in the regulations. Even when deployed, it must remain well in hand. Particular importance should be attached to a uniform, steady trot and to an extended gallop (especially during frontal movements); to prompt picking up and maintenance of the march direction; to precise and skillful handling of the lance; to brisk mounting and dismounting; and to swift passage from column to line, even when the direction of march is changed. In the larger units, the maintenance of order depends upon the precision and steadiness with which each individual escadron marches. "This means that the tactical unit must be independent: that it must march uninfluenced by neighboring escadrons; and that its chief, who should have it well in hand, must lead it with steadiness and precision at all times.—The escadron must maintain proper interior cohesion under all conditions. An involuntary seesawing and a dribbling away of some of the files, a deployment, must not be allowed to take place under any circumstances." (General v. Schmidt). Dismounted drill is restricted to the minimum in Germany. This drill is indispensible, however, for the training of the individual trooper as well as for the employment of cavalry dismounted.

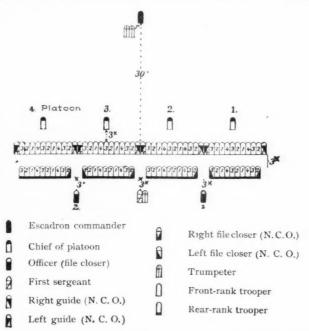
(a) THE FORMATION OF THE ESCADRON.

The platoons, each in two ranks, are formed abreast without intervals. The guides (N. C. O.) are posted in the front rank, on the flanks of each platoon. Non-commis-

^{*}Pars. 51-60, German C. D. R.

sioned file closers are posted in the rear rank, on the flanks of each platoon, the files in rear of the guides being left blank. The troopers are arranged, in each rank, according to height, from right to left.

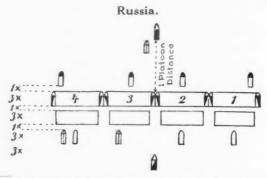
Officers are posted in front of their units in the cavalry of all armies in order to enable them to regulate the march direction and gait, and to obtain a good view. So posted, they can be seen by all their men, just before the shock occurs, can exert an influence by personal example, and can lead their men by means of signals or commands. "In front of his unit, the officer is a leader, in the ranks, a fighter." (v. BISMARK). In this connection, it should be remembered that well-mounted officers who ride far ahead of their units during a charge, may reach the enemy all alone and may be cut down before support arrives. (Colonel v. Dolffts



at Hainau, in 1813). The Prussian regulations of 1812 prescribed that officers should join the line in such a manner during a charge that the croups of their horses would be in the front rank. Such a decrease in speed on the part of the officers, as this regulation entailed, easily communicates itself to the organization, and it is better, therefore, to post officers closer to the line (as in Germany) and to let them fall back to the line of platoon commanders just before the charge begins (as in Austria).

The figure shown below represents a Russian escadron in line. The chiefs of the flank platoons are posted in front of the second file from the exterior flank of their respective platoons. Officers not commanding platoons are likewise posted in front of the line, to be precise, in front of the second file from the inner flank of the 1st and 4th platoons.

The platoons are divided into squads of four files each. The Russians, who still retain squads of three files each, have to count twos for dismounting and threes for forming route column. In Italy, each platoon is divided into sets of twos from its center toward either flank. In Austria, the platoons are still divided into three so-called patrols (Patrouillen). Platoons generally have an equal number of files and are composed, as nearly as practicable, of men and horses of the same standard of serviceability.* In Germany and Russia, the platoons retain their original numerical



*In Austria and Italy, the front rank is to be composed exclusively of dark horses' having no distinguishing marks.

designations, whereas, in France and Austria, they are numbered, irrespective of their original designations, from right to left when in line, and from head to rear when in column. Whenever a platoon would consist of fewer than twelve files, including guides (N. C. O.), the number of platoons in the escadron is decreased.

The center trooper of the base platoon (i. e., the third platoon from the right) is the guide of the escadron. In movements, the alignment is maintained by all the men riding forward steadily and at a uniform gait. The selection of a good man for duty as guide, and of a good horse for him to ride, is one of the most important duties of the escadron commander. The guide (center trooper) of an escadron must possess some influence over his comrades; he must be a good rider and must ride a powerful, quiet, and well trained horse. Next to the chiefs of platoons and the noncommissioned guides on the flanks of the platoons, the center trooper is the pillar of an escadron. In Italy, the chiefs of the two center platoons are to maintain the alignment by observing the escadron commander.

"The execution of eyes right or left when in motion must be completely tabooed. Proper alignment must be obtained by maintaining a steady, uniform cadence and by loose contact, and under no considerations by turning head and eyes right or left. Whenever the alignment is maintained by means of a uniform cadence, i. e., by instinct, whenever the gait is steady and the cadence uniform, one sees good lines; whenever this is not the case, and eyes right or left alone are employed, one sees poor lines and an eternal seesawing that ruins the horses. The eyes must remain, as much as practicable, straight to the front, and, as an aid to maintaining a uniform cadence, may occasionally be turned now to the right, now to the left, but never toward one side alone." *

"The base unit is responsible for maintaining the march direction, the gait and the cadence; all the other units take

^{*}General v. SCHMIDT, Instruktionen, p. 111.

their distances and intervals from it. In units riding abreast, the necessary alignment is likewise obtained in this manner. The leader of the base unit is responsible for its conduct. The leaders of the other units give to their subordinates whatever directions are necessary to preserve the general alignment." (Par. 31, German C. D. R.). In large units, when intervals are not definitely prescribed, the designation of an alignment (on some base unit) is replaced by a statement showing where and how contact is to be maintained.

(b) CONTACT AND FRONTAGE; NUMBER OF RANKS AND DISTANCES BETWEEN THEM.

Prussia: Under Seydlitz, the Prussian cavalry rode boot to boot; at a later date, it rode knee to knee; and since 1812, it rides stirrup to stirrup. The front of a trooper is taken as 0.80 m.

Austria: An interval of the width of half a hand is left between troopers. The front of a trooper is $1\frac{14}{3}$ paces or 0.93 m.

France: Loose touch is maintained, "They [the troopers] close in on but do not gain touch with the trooper next in line toward the center, in such a manner as to have freedom of movement in ranks." The front of a trooper is τ m.

 $\mathbf{Russia:}\;\;$ The troopers ride stirrup to stirrup. The front of a trooper is 0.80 m.

Italy: The front of a trooper is 0.9.1 m. (four troopers take up a space five paces or 3.75 m. wide). A small interval is left between stirrups of adjacent troopers.

England: An interval of 15 cm. is left between knees of adjacent troopers. The front of a trooper is 0.92 m.

In the German cavalry, the distance between ranks (measured from the tails of front-rank horses to the heads of rear-rank horses) is three paces (2.40 m.) in line, and one pace (0.80 m.) in column of platoons.

In Austria, France and Italy, the distance between ranks is two paces ($1.50\ m_{\odot}$).

In Russia, the distance between ranks is one pace (0.70 m.).

In England, the distance between ranks is three paces (2.40 m.) in line.

The distance between ranks used in the German cavalry, while greater than that used in most other armies, facilitates movements at the faster gaits. When the rear rank rides close upon the heels of the front rank, a horse falling down in the front rank will inevitably bring down the horse in rear of it.

Number of ranks. In the Thirty Years' War, the Cuirassiers of the Imperial army were formed in eight ranks and the Dragoons of that army in five ranks, whereas the cavalry of the Swedish army had already adopted the three-rank formation. Since the battle of Roszbach, the Prussian cavalry has used the two-rank formation. In the Prussian cavalry, the two-rank formation was first prescribed in the regulations of 1743.** The Swedish cavalry fought in two ranks as early as 1705. In a boot to boot charge, the troopers in the third rank hardly ever had an opportunity to use their weapons; they served to fill gaps and were likewise used for special purposes, for example, to make flank attacks. A line formed in two ranks will invariably envelop a line formed in three, provided both have the same number of troopers. A further change from the two-rank to the single-rank formation, does not seem advisable, as this would tend to impair cohesion, which the cavalry needs more than anything else when charging cavalryt. It might be well to mention that Lord Wellington objected to a second rank, even when cavalry had to charge cavalry, because it did not augment the shock power but increased disorder. Prince Frederick Charles ‡, likewise believed the single-rank formation to be the formation of the cavalry of the future.

It is claimed that the single-rank formation has greater mobility than other formations; that it facilitates movements and assembling after a charge; and that it suffers less from fire.

On the other hand, it is claimed that the single-rank formation is difficult to handle and easily pierced and that it breaks easily during movements, whereas a second rank, if provided, fills gaps occasioned by losses and resists any hostile troopers that may have succeeded in breaking through the front rank

(c) ELEMENTARY MOVEMENTS.

A trooper, when alone, can execute a turn on the forehand, but, when in ranks in close order, he can not do this

^{*}At Kesselsdorf (December 15th, 1745), the cavalry of the second Prussian line was formed in two ranks, in order that it might cover approximately the same extent of front as the first line. Geschichte des litauischen Dragonerregiments, p. 87.

[†]General v. Brandt, Grundzüge der Taktik der drei Waffen, 3d Ed., Berlin, 1859, pp. 42 and 222.

[‡]KAEHLER, Preuszische Kavallerie, p. 204.

as he takes up a space one pace wide and three paces deep. Wheels and ployments, executed by squads and platoons, take the place of the individual turn (exception: the about by squad executed by the rear rank when moving into bivouac. Par. 422, German F. S. R.).

To mount and dismount (pars. 73-76, German C. D. R.).

Passaging and backing (par. 102, German C. D. R.) are executed for short distances only. In Austria, Russia and Italy, the even numbers of the rear rank move two paces to the rear at the command to dismount.

(d) GAITS.

Uniformity in the gait is of prime importance in maintaining the alignment when in motion and in simultaneously moving large masses, especially when the latter, like the German cavalry divisions, are not formed until a mobilization is ordered. The influence exerted by speed on timely arrival at the decisive point and on prompt termination of a movement must not be magnified. The decisive factors are timely commencement of a movement and correct appreciation of time and space by the leader. The leader who properly appreciates time and space will be able to move his unit at a moderate gait and without winding his horses, so as to arrive at the proper time at the point where he desires to use it. The leader who lacks this faculty will vainly rush his unit forward, at an increased gait, only to arrive too late after all. Rising to the trot* is the rule in all units. The German trot may be employed in drills where great precision is required, for example in executing wheels. It is more difficult to obtain the gallop when ris-

^{*}In rising to the trot (posting), the rider allows himself to be raised by the thrust of one diagonal pair of legs, the right, for example, (i. e., right fore and left hind); he avoids the thrust produced by the planting of the left diagonal pair and drops back into the saddle just as the right pair is re-planted; this pair then again raises him.—Translator.

[†]In the German trot, the rider allows himself to be raised slightly by the thrust of each diagonal pair of legs in turn, i. e., he rides the seat we employ at the slow trot, but makes no effort to sit close; in consequence, he bumps the saddle lightly at each step the horse takes.—Translator.

ing to the trot than when using the German trot, as the horse can not be gathered so well in the former as in the latter case.

The mobility of an organization is influenced by the load carried by the horses, by training, by previous exertions, by feeding, and by the character of the ground. When some speed is required, it is best to employ a steady short trot; when considerable speed is required, a smooth gallop (the horses taking long strides without rushing and assuming an unconstrained, natural position), as these gaits produce the least fatigue.

The following table shows the distances covered at the various gaits per minute:

	Walk.		Trot.		Gallop.		Accelerated Gallop.	
	Paces	m.	Paces	m.	Paces.	m	Paces.	m.
Germany	125	100	275	220	500	400	700	560
Austria	140	105	300	225	500	375		
France		110		240		340		440
Italy		100		250		350		450
England		106	-	214		400		
Russia*		to 106		212		283		425

A short trot that does not strain the lungs and an extended gallop are used everywhere. The gallop is particularly well developed in the German cavalry, which, with its accelerated gallop, covers 120 m. more per minute than the French cavalry with its gallop alongé, and 135 m. more per minute than the Russian cavalry with its "field gallop." In charging over 1,500 m. of open ground, against infantry, a German escadron would be exposed to fire for 2 minutes and 37 seconds, a French escadron for 3 minutes and 24 seconds, and a Russian escadron for 3 minutes and 32 seconds. The short distances covered per minute by the Russian cavalry are due to the attempt to harmonize the performance of a mount in the cav-

^{*}Instead of at the gallop, the Cossacks ride at an accelerated trot. This may be increased to the so-called Namjot, a species of lope in which 283 m. are covered per minute. The accelerated Namjot corresponds to the "field gallop" of the cavalry of the Line.

alry of the Line with that of the smaller Cossack horse. In France, training is to be so regulated that horses will cover 10 km. at a trot, or 6 km. at a gallop without exertion. No definite figures can be given for distances covered per minute at top speed, as allowance must be made, in a unit in close order, for the weaker horses, whose performance is more reduced by exertion and by difficult ground than that of the stronger horses. The Russians count on covering 800 paces (565 m.) during the first minute of riding at top speed.

According to Austrian observations, the distances covered per minute on soft ground in the field, are as follows:

At a walk, 90-96 m.

At a trot, 150–160 m. This may be continued up to 30 minutes = 4,800 m.

At a gallop, 265–280 m. This may be continued up to 5 minutes = 1,400 m.

At top speed, 370–400 m. This may be continued up to τ minute = 400 m.

The work a horse is capable of performing is limited by the exhaustion of its lungs and muscles. The lungs become exhausted first, the muscles next. A horse, when quiet, takes eight to twelve breaths per minute; after going at top speed, however, it takes 130 breaths per minute,*

The following table shows the number of respirations per minute of a horse:

Without kit:	With field kit:				
Slow walk 16-24	Ordinary walk30-39				
Lively walk 34	Walk uphill 34				
Trot, after 1 km 42	Walk downhill 28				
Trot, after 2 km	Trot, after 1 km 56				
Trot, after 3 km 51	Trot, after 2 km 60				
Trot for longer distances, up to 65	Trot, after 3 km 65				
Gallop for 1 km 55	Trot for longer distances, up to 79				
Gallop for 31/2 km	Trot uphill				
Top speed for 300 m 58	Trot downhill 55				
Top speed for 1 km 60-72	Gallop for 1 km 74				
Top speed for longer distances,					
up to 130					
Finally: Congestion of the lungs.					

The trot over soft ground imposes the same strain on the lungs as the gallop over hard, level ground.

Fast gaits uphill tire principally the lungs, fast gaits downhill the muscles and joints. Soft ground tires lungs and muscles and affects particularly the sinews, hard ground principally joints and hoofs.

^{*}Fioldmarshal, Lieut. Gen. Conrad v. Hötzendorf, Chief-of-Staff of the Austro-Hungarian Army, Zum Studium der Taktik, p. 748.

Upon halting, the number of respirations decreases rapidly, the rate of this decrease being directly proportional to the speed with which the horse moved. If a horse shows 55 respirations after traveling 1 km., this number, upon halting, drops in 5 minutes to 45, in 10 minutes to 28, and in 20 minutes to 17. This clearly indicates the necessity of rests or of coming down to a walk for corresponding periods. The breathing, recognizable by the heaving of the flanks, is an index of the remaining energy in a horse.

Lungs and muscles are tired least by the walk. This gait promises, therefore, the greatest endurance on the part of the horse. A horse will walk ten hours a day without considerable fatigue. This is equivalent to 6,000 m. per hour or 60 km. per day. But, to ride continually at a walk tires the trooper and causes him to lounge in the saddle, which produces a deleterious effect on the horse.

If nothing but the trot were used in covering long distances, the horses would soon become exhausted. Therefore, walk and trot are used alternately.

A fast gallop in itself exhausts horses suddenly; after such an exertion they require from ten to fifteen minutes to recover, to reestablish the normal action of the lungs. General Bonie of the French army considers 5,000 m. to be the maximum distance that a horse can gallop at a single stretch on one day. For some time after such a performance, however, a horse can move only at a walk. At Vionville, v. Bredow's brigade rode 5,500 m. at top speed. General v. Schmidt * says: "It is absolutely essential that the horses gallop quietly and steadily. They must not gallop hurriedly and violently, change from one lead to the other, and throw their riders about in the saddle, for this not only causes disorder in ranks and loss of cohesion in the line, but makes the movement more difficult for the horses, exhausts them prematurely and deprives them, on account of their excitement, of their wind, which they need more than anything else -The gallop stride must go flat and evenly over the ground and must be without high action -The troopers must sit still, press the crotch firmly down into the saddle and must not flounder about. They must let their lower legs hang quietly down the sides of their horses so that the latter are in no way disturbed and excited either by the seat or by the position of the legs. They must, further, closely conform with their bodies to every movement of their horses, must have a light hand, giving and taking rein when necessary, and must make every effort to keep their mounts down to a uniform, long stride. After a few drills, the horses will no longer become excited nor be in the air, and will gallop in good balance, quietly, without hurry and without rushing forcibly into the bit. Both trooper and horse must simultaneously learn to keep their wind, coolness and temper, and acquire a natural, free and unconstrained carriage. Horse and trooper must give one the impression that this extended gallop is easy and pleasant; that they enjoy it; and that they are in a perfectly unconstrained, natural position."

^{*}Instruktionen p 43.

"This is the only way in which the escadrons can be kept from increasing the gait to top speed against the will of their leaders and that of the troopers. Such headlong rushes can occur only when the gallop during the charge is violent, hurried and unsteady; then the ranks become disordered and cease to exist entirely, so that finally six, eight, and perhaps ten ranks are formed: this is the gravest fault in the shock."*

(e) GENERAL PRINCIPLES FOR MOVEMENTS.

Commands, Orders, Bugle and Visual Signals, and Verbal Directions.

Cavalry is led by means of commands, orders, bugle and visual signals, and verbal directions. Leader and organization should keep each other constantly in view. Commands should be given only when the leader is certain that they will be understood; generally speaking, they can not be employed in organizations larger than an escadron. In large units, commands are replaced by orders or by verbal directions. For transmitting orders quickly, the regimental commander may avail himself of his adjutant and his orderly officer. If he does this, his orders can simultaneously reach both flanks of the regiment.

Bugle signals, whose number is rather limited in Germany, enable the leader to communicate his will quickly and thoroughly to the troops. Bugle signals should not be used when they might betray the presence of the organization or cause misunderstanding in other units. A bugle signal is executed as soon as it is understood, i. e., the units should "ride to the tune of the bugle signal" (in das Signal hineinreiten). The most important bugle signals are "front" (Front), + "assemble," and the "regimental call"

^{*}Ibid., p. 45

t"The signal 'front' is employed:

[&]quot;(a) To cause a line, a line of escadrons in columns of platoons, or a regimental column (mass) that has wheeled to a flank or to the rear by platoons, to resume the original march direction:

[&]quot;(b) To cause a double column or a column of platoons to face toward the front (i. e., toward the enemy) by wheeling into line by platoons, or a route column to face toward the front (i.e., toward the enemy) by wheeling into line by squads;

[&]quot;(c) To cause a route column that is moving to the rear into a defile, to resume the original march direction;

[&]quot;(d) To cause a unit that is moving to the rear in extended order, to face again toward the enemy.

[&]quot;Whenever the execution of the signal necessitates a wheel or a turn to the rear, the wheel or turn is made to the left about." (Par. 21, German C. D. R.).

(Regimentsruf),* a special one being prescribed for each regiment. The regimental call is to be used in critical moments when no time is available for giving orders or commands. Its purpose is to cause the eyes of all to be directed upon the leader. The organization must be trained to form for attack in correct formation and in the proper direction at a signal from the leaders, and must follow in trace as soon as the latter move off.

Visual signals are used to lead troops silently. Before giving such signals, the leader may attract the attention of his men by means of a blast on the whistle. As visual signals can not be seen by all the troopers when in route column, they are repeated by all subordinate leaders down to and including chiefs of platoons. Visual signals and verbal directions are valuable when the enemy is to be surprised. It must be remembered that such signals do not always ensure the simultaneous and orderly execution of movements. It is of the utmost importance that each unit follow its leader wherever he moves. In front of the enemy, we must absolutely rely upon each trooper's following the lead of his commander. The leader indicates by raising his arm, that his unit is to follow him without command or signal.

2. Wheels and Turns.

The regulations prescribe wheels† (on fixed pivot), such as wheel into column,‡ wheel into line,¶ and about wheel,§ by platoons and by squads, and turns (on moving pivot), i. e., changes in the march direction without change in the formation. (Pars. 36–39, German C. D. R.). Wheel are executed at angles of 90 and 180 degrees, and turns (changes

^{*}Par. 23, German C. D. R.

[†]Schwenkungen.

^{\$}Abschwenken.

[¶]Einschwenken.

[&]amp;Kehrtschwenkung.

Drehungen.

of direction) at any angle. Turns may be executed by command or by signal at angles of 45 or 90 degrees. During turns, the chief of the base platoon maintains the cadence. The other chiefs of platoons and troopers or units diminish or increase the cadence, according to their position, or change the gait when necessary. The leader of the base platoon (or base unit) may be directed to decrease the cadence when necessary.

3. Deployments and Front into Line.

The term deployment, as used in the regulations, denotes the change from one of the deep columns of the regiment to a broader combat formation, for example, the change from column of platoons to line of escadrons in columns of platoons. Line may be formed from column by executing front into line. In the deployment as well as in front into line, the units in rear habitually place themselves on both flanks of the leading unit, the second and third to its right, the others to its left. The distances to be traversed by the units in rear may be decreased by first changing the march direction and, simultaneously therewith, deploying or executing right front into line or left front into line, as the case may be, in the direction in which the turn is made.

The deployments and front into line are executed as follows:

If halted or if marching at the walk, at the trot;

If marching at the trot, at the gallop; and

If marching at the gallop, at the gallop.

In the deployments, if executed from the halt (or while marching at the walk), the base unit advances the distance prescribed or ordered in the particular case, at the trot, and then halts (or comes down to the walk); if executed while marching at the trot or at the gallop, the base unit advances the distance prescribed or ordered, without changing the gait, and then comes down to the next slower gait, or, if deploying from route column, comes down to the

walk. In forming front into line from a halt (or while marching at the walk), the leading element advances twenty paces at the trot and halts (or comes down to the walk); if executed while marching at the trot or at the gallop, the leading element continues to advance without changing the gait.

By halting the leading element, the deployment is accelerated, and gain of ground to the front is avoided.

Changes from one formation to another, in so far as they do not involve the execution of front into line, and ployments (habitually executed on the base unit) seldom require haste. Therefore, such movements are executed without changing the gait.

(f) MOVEMENTS OF THE ESCADRON IN LINE.*

The line is the most important formation of the cavalry, as it is the formation in which the charge is made. It is essential in all movements made in line that the horses be perpendicular to the front and that accurate contact be maintained between stirrups. The march direction can be maintained, after a charge is once begun, only when this principle is observed. The front-rank men take care to maintain proper contact, while the rear-rank men preserve the proper distance and cover in file. The center trooper (guide of the escadron) follows at the prescribed distance in the trace of his chief of platoon. In Austria, when marching at fast gaits, rear-rank troopers are permitted to ride so as to cover the intervals between front-rank men.

The oblique (used for short distances only) is executed by each trooper making a half turn individually, and marching at an angle of 45 degrees to the original direction.

Changes of front are effected either by executing turns or by the leader of the base unit's marching upon a new objective point, the rest of the escadron gradually conforming to the movement.

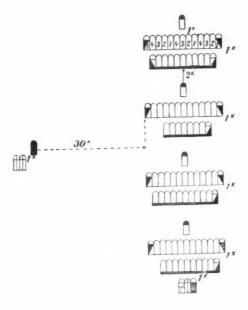
^{*}Pars. 78-80, German C. D. R

If the escadron is to move to the rear, the platoons execute an about wheel (in Russia the about wheel in this case may be executed either by threes or by platoons). At the signal "front," platoons wheel to the left about and face again toward the enemy. The term "front" denotes the side on which the leader is posted.

(g) THE COLUMNS OF THE ESCADRON.

1. Column of Platoons.

Cavalry must be able to form line from column quickly in any direction. For this reason, columns must be open. narrow and not too deep. In addition, they must be capable of changing direction easily, and the distance between ranks in the various elements must be sufficient to enable the horses to gallop comfortably, and to prevent disorders occurring in any one subdivision from being communicated to others. In a close column, the dust raised settles very slowly and the horses can not see where they are stepping; in consequence, they fall and, at the faster gaits, order is easily lost. It is not advisable to increase the distance between ranks as the formation of line is thereby retarded. The column of platoons meets all the requirements of an assembly and principal march formation of an escadron on the battlefield. Line may be quickly formed in any direction from column of platoons, by first partially changing direction. In passing defiles, the files on the flanks are broken off and follow their platoons. (Par. 93, German C. D. R.). When this is done, care must be taken that elongation of the column does not take place. In Austria, entire squads break from the flanks, in France, as many files as required. Column of platoons is formed either by wheeling into column or by ploying. The last-named movement is habitually executed on the center platoon, i. e., the base platoon, in exceptional cases, on a flank platoon. When the column of platoons is to be given a different march



direction than that obtainable by wheeling into column, the march direction is indicated in the command. In column of platoons, the platoons are in rear of and covering each other; the rear rank in each platoon is one pace in rear of its front rank; the chiefs of rear platoons follow the next preceding platoon at a distance equal to the front of their platoon less eleven paces; the center trooper of each platoon follows at one pace distance in the trace of his chief of platoon.

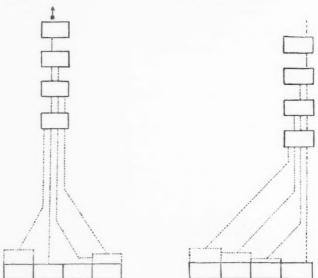
The eleven paces, mentioned above, are obtained by adding to the depth of one platoon (3+i+3 paces), the depth of the horse (3 paces) of the chief of the next platoon in the column, and the distance of that chief from his own platoon (i pace). To enable the horse of a chief of platoon to move at fast gaits, it must be at least one pace from the next preceding platoon. Moreover, rear platoons must be able to wheel into line. Hence, the front of a platoon must not be less than twelve paces. Since each trooper occupies a front of one pace, the minimum strength of a platoon is thus obviously twelve files.

In France, the distance in the clear between platoons amounts to half platoon front. The platoons can wheel into line when each consists of twelve to thirteen files, but not when each consists of a greater number of files. When each platoon consists of eighteen files (each file occupying a front of 1 m.), the distance in the clear between platoons is 9 m. and the depth of the two ranks of each platoon 6 m. Hence, when the platoons wheel into line, three files in each platoon find no room, as the platoon front amounts to 18 m. while the distance between platoons plus the depth of a platoon is 15 m. only.

In other armies, the rear ranks in column of platcons preserve the same distance from the front ranks as in line. In Austria and France, in forming column of platoons on a flank platoon, the latter moves straight to the front, the second platoon executes two wheels, each of 45 degrees, the third and fourth each a quarter wheel, each platoon then following the leading platoon.

toons from Line, on the Center Platoon.

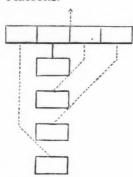
Forming Column of Pla- Forming Column of Platoons from Line, on the Right Platoon.



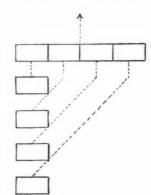
Cavalry should be able to deploy in any direction for attack. Hence, all ideas of the drawbacks of inversion should be abandoned. It is essential that the platoons be able to wheel into line to the right as well as to the left, and that they be able to form front into line irrespective of the numerical order in which they happen to be. The term "front" always denotes the side of the column on which the leader is posted. It is immaterial whether the first or the fourth platoon is on the right flank in line.

This apparently simple principle has only recently received general recognition in the cavalry, least of all in armies where the number of a unit changes with its position. At Mockern, October 16th, 1813, the Lithuanian Dragoons, after charging hostile cavalry, had wheeled about by platoons and then wheeled to the right by escadrons in order to charge, in echelon, retreating French infantry. "By charging with inverted platoons and inverted escadrons, such confusion had been created, that a single hostile escadron would have sufficed to rout the entire regiment. After the fight, I was compelled to post the first sergeant of the Jäger Escadron where the right was to rest and then gradually to form one escadron after another into line."*

Right and Left Front into Line from Column of Platoons.



Right Front into Line from Column of Platoons.



Line is formed from column of platoons either by executing front into line or by wheeling into line. It is simpler to wheel into line than to execute front into line, as contact, alignment and march direction are more easily maintained, the pivot flanks of the platoons being already in the new line.

^{*}Graf HENCKEL v. DONNERSMARCK, Erinnerungen aus meinem Leben, p.229,

Besides, a simple command of the escadron commander suffices for wheeling into line, whereas several commands of the chiefs of platoons are required to execute front into line. Moreover, especially at the fast gaits, it is easier for the troopers to wheel than to oblique, and, in addition, the hesitation on the inner and the rushing on the outer flanks, the seesawing of the line, when executing front into line toward one flank only, is avoided. But, when only a short distance separates the organization from the enemy whom it is to charge, wheeling into line makes it more difficult to put the horses into a fast gait. The manner of forming line is of less importance in an escadron than in larger units. If the leading element continues the march while front into line is being executed, the deployment is retarded, but the distance to the objective is reduced. When, on the other hand, the leading element halts, or changes direction, while the remaining elements wheel into line, the deployment is accelerated, but the distance to the objective is not reduced.

Front into line is habitually executed by the rear platoons placing themselves, at the commands of their leaders, to the right and left respectively of the leading platoon. In exceptional cases, right front into line or left front into line may be executed. This is especially true if the march direction is changed at the same time, when the rear platoons execute right front into line or left front into line, as the case may be, in the direction in which the turn is made. In the Russian and the French cavalry, right front into line and left front into line alone are used. In the Austrian cavalry, the second platoon places itself to the right and the other platoons place themselves to the left of the leading platoon. In France, the escadron commander, by placing himself either on the right or on the left of the leading platoon, indicates whether right front into line or left front into line is to be executed. The advantages of simultaneously executing right and left front into line are obvious. When executing right and left front into line, the leading platoon remains the base platoon; its chief can, without difficulty,

maintain the march direction: the gait is steadier during the movement and order is more easily preserved; and, finally, line can be formed more quickly than when front into line is executed toward one side only. Right and left front into line, simultaneously executed, has the disadvantage that, in certain circumstances, a platoon that is led by a chief who possesses little skill or one who is not well mounted, may become the base platoon.

Right and left front into line follows quite logically from the ployment on the center platoon. In an escadron, it is immaterial how front into line is executed, as the time that could be gained is insignificant. It is simply a question of maintaining a principle that applies to the regiment and is logically also extended to the escadron. For mention of a further drawback of righ: and left front into line, see p. 924, infra.

The following will give an idea of the time required to form front into line from column of platoons when each platoon consists of twelve files:

Right (or left) front into line at the trot requires 21, at the gallop 14 seconds;

Right and left front into line at the trot requires 15, at the gallop 12 seconds;

Platoons front into line from column of fours (each platoon forming front into line) at the trot requires 18, at the gallop 9 seconds.

Hence, front into line from route column, under favorable conditions, requires, at the trot 33, at the gallop 21 seconds.

On the other hand, to wheel into line when the leading platoon has changed direction (90 degrees), requires, at the trot 16, at the gallop 10 seconds.

2. The Echelon Formation.

The German C. D. R. of 1909 no longer prescribe the "echelon formation" (the so-called "half-column"), in which the platoons were posted so as to uncover each other wholly or in part. The formation was valuable in training leaders and troops in riding accurately; it could scarcely

be said to be suitable on the battlefield for the purpose of gaining the flank of the enemy.

Orderly movements in this echelon formation are practicable only when the terrain is open and when the platoon leaders are carefully trained. Each platoon leader follows his own march direction, and cohesion during the movement can be maintained only by close observation of the distance from the next preceding platoon. If the rear platoons close up too much, they can not wheel into line; if they lose distance, and this is the most common error, the alignment, on forming line, is lost. Another drawback, finally, was caused by the fact that the position of the non-commissioned guide on the outer flank of each platoon was not fixed, but depended upon the number of files in his platoon. The only way in which the echelon formation could be taken up from line by wheeling, was in a direction making an angle of either 45 or 135 degrees with the original front; whereas column of platoons can be formed in any direction. When in echelon formation, the march direction can be changed only by first forming column of platoons.

In echelon formation, it is difficult to utilize cover and to avoid obstacles.

To form line from echelon formation. When executing right and left front into line from column of platoons, the leader of the base platoon is already in front with his platoon and need only continue to maintain the march direction, whereas, in forming line from echelon formation, he is the second to reach the line, whereby the maintenance of the march direction is endangered. When in echelon formation, the escadron can form line at once in three definite directions only, whereas, when in column of platoons, the escadron, by first partially when single directions can quickly form line in any directions of the second to the se



changing direction, can quickly form line in any direction toward the front or half front,

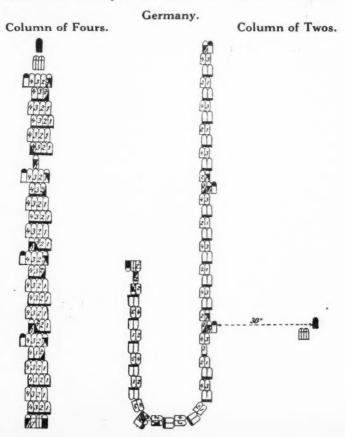
Single-Rank Formation.

In order to minimize losses, the escadron when in line, or the platoons when the escadron is in column of platoons, may be formed in single rank. (Par. 98, German C. D. R.). The platoons, when the escadron is in column of platoons, may also be formed in single rank when attacking infantry, artillery, or machine guns. (Par. 113, German C. D. R.). Single rank is formed by the rear-rank troopers placing themselves with or without an interval to the right of their file leaders. The troopers must be trained

to form single rank from route column and from column of platoons. If an escadron consisting of 120 troopers forms single rank with an interval of one pace between troopers, it will cover a front of 240 paces, i. e., approximately the same front as a regiment in line.

3. Route Columns.

Cavalry marches either in column of twos or in column of fours, as side roads average from two to three, main roads from five to seven paces in width. In column of fours, the



various sets of fours follow each other without distance, the rear-rank troopers in each squad covering the intervals to the right of their file leaders. Thus, the front-rank troopers in each squad but the first, cover the front-rank troopers in the next preceding squad, the rear-rank troopers in each squad but the first, covering the rear-rank troopers in the next preceding squad. In column of twos, the half-squads follow each other in a similar manner. More than two men are never allowed to ride abreast in column of twos, except where the chiefs of platoons are posted.

Route column is generally formed by first forming column of platoons and then by ploying on a flank squad (in Italy by ploying on a center squad, in France by habitually ploying on the right squad, i. e., by executing right forward, fours right). Route column may also be formed by wheeling by squads. As each squad is four paces wide and six paces deep (when the rear rank follows the front rank without distance), the squads can not wheel simultaneously into column, but must follow each other successively. The change from column of fours to column of twos is effected by ploying. Platoons front into line from column of fours is executed simultaneously by the platoons, or successively (for example on debouching from a defile).

Line is formed from route column in a similar manner as from column of platoons. When the escadron is in route column and it is impracticable to form line in the usual manner, line may be formed quickly toward a flank by the command "Right" (or "Left") "Front," given by the escadron commander, or by the signal "Front," at which command, or signal, the squads (or half-squads) wheel into line and close in while riding forward at the trot.

Since a squad as well as a half-squad is six paces deep, but the former four, the latter two paces wide, gaps of two and four paces respectively occur when line is formed by wheeling by squads. These gaps must be closed by the troopers' closing in toward the center. The regulations of all the other armies prescribe that, in forming line to a flank, each platoon is first partially to change direction and then to form line.

In order to decrease the depth of route columns, fours (or twos) follow each other without distance in the German cavalry. This practice interferes with riding at fast gaits, but accelerates the formation of line. Disorders are easily communicated to the entire column, whose depth prevents the leaders from exerting as much influence over their men as in other formations. Moreover, when speed is required, it will, as a rule, be necessary to use a formation that permits line to be formed with despatch (column of platoons, for example, the flank files being broken off when necessary).

On June 28th, 1866, the 3d Cuirassier Regiment received orders to march to Königinhor with one horse battery and one field battery. The batteries finally found the road impracticable. The three escadrons that marched in rear of the batteries wheeled about and moved to the rear at the trot. As it was almost dark and the path was steep and covered with stones, a number of horses in the escadrons stumbled and fell here and there. The gaps occasioned thereby caused the troopers in rear to gallop ahead to close up, whereby the outposts of the 1st Army Corps, which could not account for this unexpected return of the column, were alarmed. The panic of the Bavarian cavalry at **Hunfeld** and **Gersfeld** likewise occurred in route column.*

In other armies fours and twos cover in file. In Austria, France and Italy, the distance between fours (or twos) is 0.75 m., in England, 1.20 m. In practice, the distance of one pace between fours (or twos) is generally increased, as it is difficult to maintain. The French regulations therefore count on an elongation of from one-sixth to one-fourth of the depth of each escadron, but permit a reduction or total elimination of the distance between fours or twos ("les cavaliers peuvent même gagner du terrain à droite ou à gauche de ceux qui les précèdent").

An escadron of 148 troopers, when formed in column of fours in the German manner, has a depth of 97 m., and when formed in column of fours in the Austrian manner, a depth of 124 m. This difference of 27 m., while of little importance in a single escadron, must be reckoned with in larger units, as it retards the execution of front into line. This movement is very apt to be still more retarded, because the distance between fours is more likely to be increased than diminished. The German escadron in column of twos has a depth of 178 m., the Austrian a depth of 233 m. There is thus a difference of 55 m. between the two.

The Russian cavalry uses the column of threes and the column of twos as route columns. Each rank turns independently by threes (or forms column of sixes—the so-called "turning column," the route column

^{*}See v. Lettow-Vorbeck, Krieg von 1866, III, pp. 82 and 105; Neue miitärische Blätter, 1902, I, p. 97, Queckmoor und Gersfeld,

used on wide roads), the rear-rank troopers following and covering their file leaders. In Austria, the turning column is also used for moving a short distance to a flank. Route column may likewise be formed by ploying. Column of twos is formed from column of threes in the same manner as column of twos from column of squads in the infantry. Aside from the disadvantage of counting off twice (i. e., counting twos for dismounting and threes for forming route column), the column of threes is longer than the column of fours. As the distance between sets of threes is one pace (0.71 m.), the depth of an escadron in column of threes amounts to 151 m., as against 97 m., the depth of a German escadron in column of fours.

The Italian cavalry uses the most logical procedure, in that the principle of forming column of platoons on the base platoon, and front into line on both flanks of the leading element, has been extended to forming route column and platoons front into line from route column. The senior non-commissioned officer of a platoon rides directly in rear of his chief of platoon, the next ranking non-commissioned officer of the platoon riding in the rear rank and covering the senior non-commissioned officer. Thus, if the chief of platoon should be disabled, he can be replaced in the simplest

manner.

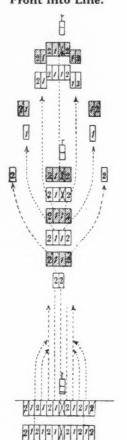
The two juntor non-commissioned officers of the platoon are posted on the flanks of the front rank of the platoon. The platoon is then divided into sets of twos, from the center toward each flank, the "center trooper" (the senior non-commissioned officer) counting as number one. In forming column of fours, the four files in the center of the platoon ride straight to the front; they are followed by the two files next on the right and by the two next on the left, these forming a new squad in rear of the former center squad, and so on. Front into line is executed by each two files on the right of each squad placing themselves abreast and to the right of the leading squad, each two files on the left of each squad similarly placing themselves abreast and to the left of the leading squad. When the column is to form line to the right or to the left, the chiefs of platoons turn the heads of their platoons in the indicated direction, and each platoon then executes front into line as explained. In forming column of twos from column of fours, the exterior files of each squad place themselves in rear of the center files of their squad.

A difficulty can arise only when the route column has faced to the rear and then executes front into line. In this case, front into line must be executed by half-platoons, the last half-platoon moving abreast of the

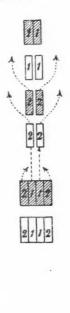
one in the lead.

Italy.

Forming Route Column and Front into Line.



Forming Column of Twos from Column of Fours.



In the **English** cavalry, column of fours is formed in a similar manner as in the Italian cavalry, the squad on the right of the center trooper moving out first.

2. THE REGIMENT.

(a) THE FORMATIONS.*

*Comparison: The Formations of the Regiment:

France.

- Line: The escadrons, each in line, are abreast at intervals of 15 paces.
- 2. Line of Escadrons in Columns of Platoons (Ligne de colonnes): The escadrons, each in column of platoons, are abreast at deploying intervals plus 15 paces.
- Mass: The escadrons, each in column of platoons, are abreast at intervals of 15 paces.
- Column of Platoons (Colonne de pelotons): The escadrons, each in column of platoons, are in rear of each other at a distance of 23 paces.
- Column of Escadrons (Colonne d'escadrons): This is a line of escadrons in column of platoons that has wheeled to a flank. The escadrons, each in line, are in rear of each other at full distance (68 paces), half distance (38 paces), or without distance (23 paces).
- 6. Double Column: The escadrons, each in column of platoons, are formed two and two abreast at 15 paces interval. The distance between the leading two escadrons and the rear two is 23 paces.
- Route Column: Column of twos or column of fours. The distance between twos or fours is 0.75 m., between escadrons, 12 m.
- Line of Platoons in Columns of Fours (Ligne de pelotons par quatre): This is formed by ploying from line. The distance between fours is 1.50 m.

Germany.

- 1. Line: The escadrons, each in line, are abreast at intervals of 6 paces.
- Line of Escadrons in Columns of Platoons (Eskadronskolonnen): The escadrons, each in column of platoons, are abreast at deploying intervals plus 6 paces.
- Regimental Column (Regimentskolonne): The escadrons, each in column of platoons, are abreast at intervals of 6 paces.
- Column of Platoons: The escadrons, each in column of platoons, are in rear of each other at a distance of 6 paces.
- Double Column: The escadrons, each in column of platoons, are formed two and two abreast.
- 6 Route Column: Column of twos or column of fours. No distance between fours or twos. The distance between escadrons is 8 m.

7. Open Formations.

The regiment consisting of from three to five escadrons, can be led directly by its commander, and, if conditions are not too unfavorable, can be controlled by his voice. The regiment is not too large for the regimental commander to make his influence felt.

The evolutions of the regiment, especially its combat exercises, are designed to weld the escadrons into a homogeneous whole, to train the escadron commanders to act on their own initiative in accordance with the situation, and to prepare the regiment for its duties as a part of a larger organization. (Par. 116, German C. D. R.).

Escadron commanders are responsible for the maintenance of cohesion in and the correct execution of movements by their escadrons. Escadron commanders should foresee fluctuations in the evolution executed by the cavalry force of which their escadrons form a part. Each escadron commander must prevent those fluctuations from being communicated to his own escadron, or cause them to be gradually adjusted while the movement is in progress. (Par. 122, German C. D. R.).

When, as will frequently happen, the voice of the regimental commander does not suffice for giving commands for the execution of evolutions, recourse must be had to orders. For their transmission, the regimental commander has at his disposal the adjutant and one orderly officer.

1. The Regiment in Line.*

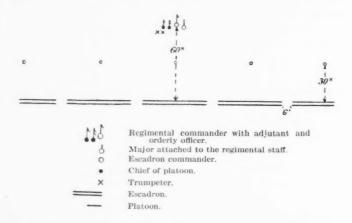
When the German regiment is in line, the escadrons, each in line, are posted abreast of each other at intervals of six paces (4.8 m.). In the Austrian regiment, the interval between escadrons in line is 7.5 m., (between "divisions"—so-called—in line, 22.5 m.†), in the French‡ and Italian

^{*}Par. 127, German C. D. R.

 $[\]dagger If$ the regiment is in one of its columns, the interval between "divisions" is reduced to ten paces (7.5 m.).

On account of this interval and the loose touch maintained by the French troopers, a French regiment overlaps a German regiment by one and one-fourth times escadron front, provided the two regiments considered are equal in strength.

regiments, 12 m., in the English regiment, 7.3 m., and in the Russian regiment, platoon front. The line is the combat formation of cavalry. It can not be handled with suf-



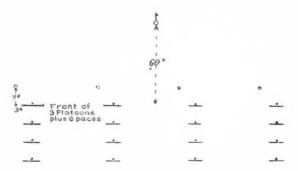
ficient ease to permit march direction or front to be changed quickly at a fast gait. It is best adapted for moving straight to the front or straight to the rear. When a charge is contemplated, line should not be formed until the organization is facing in the direction in which the shock is to be delivered.

2. Line of Escadrons in Columns of Platoons.*

When in line of escadrons in columns of platoons, the regiment possesses greater readiness for combat than in any other formation, barring line. Line of escadrons in columns of platoons is taken up when evolutions are no longer necessary and when the regiment is facing in the direction in which it is to attack. This formation once taken

^{*}Eskadronskolonnen.

up, the regiment moves, in the main, straight to the front. In line of escadrons in columns of platoons, the escadrons, each in column of platoons, are abreast of each other at deploying interval plus six paces. In this formation, when the platoons consist of twelve files each, the regiment has a depth of 40 paces and a front of 162 paces (when the platoons consist of sixteen files each, a front of 228 paces).



When in line of escadrons in columns of platoons, the regiment can form line without difficulty, can avoid obstacles easily, and its losses are less than in line, as the small columns marching abreast compel the enemy to distribute his fire. Furthermore, this formation facilitates detaching escadrons on independent missions.

Regiments of six escadrons (Austria and Russia) possess these advantages to a limited extent only, as they cover a front of 290 paces (or, when platoons consist of sixteen files each, a front of 400 paces).

The high value placed on line of escadrons in columns of platoons had its origin in the era in which all cavalry formations were designed with a view to the employment of cavalry in successive lines. "It [line of escadrons in columns of platoons] possesses little handiness, renders materially more difficult all changes of direction, loses direction

and distances very easily, and necessitates complex movements in order to form column. These disadvantages become strikingly apparent when considerable masses of cavalry are assembled. Even in a brigade these drawbacks make themselves very sensibly felt. It is, in fact, a formation designed exclusively with a view to the employment of units in successive lines, and for this reason alone meets one-sided requirements only. There is, however, no compelling reason for retaining it as the principal maneuvering formation of cavalry and for considering it, as it were, outside the limits of discussion".* General v. Bernhardi recommends that the regiment be formed in "line of demiregiments," each of the latter forming one unit and embracing two escadrons, each in column of platoons, abreast. This formation is already employed in Austria, where the regiment advances in line of "division columns"—so-called.



"The regimental commander would then have but two units to direct. These two units will maintain their position relative to each other more readily than four, will execute changes of direction with great ease, and will be able to form line just as quickly as will a line of escadrons in columns of platoons. Moreover, they will permit column or successive lines to be formed with greater ease than is possible from line of escadrons in columns of platoons. The formation in demi-regiments permits successive lines to be formed, in the simplest manner, to the front, and an

^{*}v. Bernhardi, Unsere Kavallerie im nöchsten Kriege, p. 162 (see Cavalry in Future Wars, by v. Bernhardi, Goldman's translation, p. 228).

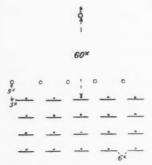
echelon formation to be taken up in any direction. In addition, this formation is very mobile, easily concealed, and combines the advantages of a route formation of little depth with those of a maneuvering formation. In the latter character, it might be employed to particularly good advantage by large units operating in close country, as it enables the regimental commander to keep the troops well in hand, while, at the same time, permitting deployment with the utmost despatch in combat formation in successive lines either to the front or to a flank. It would, without doubt, have the same advantages in the brigade when the regiments are formed side by side. It will be particularly adapted for flank movements, in which it is essential to develop, while in motion, the maximum fighting power in the direction of the movement, and in which it is desirable, after wheeling into line, to have the requisite depth as well as protection on the exposed flank."*

3. The Regimental Column.+

The regimental column (called "mass" in all the other regulations) is used principally as an assembly formation. It should be used as little as possible on the battlefield, as it may receive artillery fire at long ranges and is never secure from being surprised by fire. On account of its width, a regimental column is difficult to conceal and the dust raised by it at fast gaits does not settle quickly, which fact makes it more difficult to surmount obstacles. When the regiment is in this formation, the regimental commander can still con-

^{*}v. Bernhardi, Unsere Kavallerie im nöchsten Kriege, p. 163 (see Cavalry in Future Wars, by v. Bernhardi, Goldman's translation, pp. 228 and 229).

[†]Regimentskolonne. This formation is identical with the "mass" used in the United States Cavalry, except that the escadrons are in columns of platoons instead of fours, and that the interval between elements is 6 paces instead of 11 yards.—Translator.



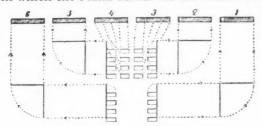
trol it directly by commands. In regimental column, the escadrons, each in column of platoons, are abreast of each other at intervals of six paces (in France, Italy and Austria ten paces, in Russia, seven paces). As the regimental column can not be directly deployed into line, it affords the regiment a readiness for combat next inferior to line and line of esca-

drons in columns of platoons. When platoons consist of twelve files each, the regimental column is 40 paces deep and 66 paces wide (in Austria 122 paces wide). On account of this favorable ratio of width to depth, this column is both very compact and very mobile.* To form line quickly to the front requires special training. The deployment into line in an oblique direction as a rule causes an echeloning of the escadrons. The regimental column appears to be particularly unsuited for regiments of six escadrons. In Italy, the "mass" formation is to be employed only so leng as the enemy's actions or the terrain do not compel the assumption of line of escadrons in columns of platoons. The Russians seek to remedy the disadvantages of the regimental column by breaking off the flank escadrons.

^{*}When cavalry in regimental column enters the zone of effective hostile fire, it very quickly suffers serious losses.

Obstacles on the battlefield of Vionville compelled the 16th Cavalry Brigade to close intervals when it rode past Flavigny in line of escadrons in columns of platoons. This converted the brigade into a dense mass, which offered a favorable target to the French projectiles. The brigade was then forced to retire on account of the heavy losses suffered by it. The 3d Hussars lost on this occasion 3 officers, 80 men and more than 100 horses. Kunz, Reiterei, p. 101

Front into Line from the Russian Regimental Column, in which the Flank Escadrons are broken off.



Column of Plateons.

The escadrons, each in column of platoons, cover and follow each other at platoon distance plus six paces. This column can be controlled by the voice of the regimental

commander in exceptional cases only. Visual signals and bugle signals increase in importance. This is likewise true of following in trace, the escadrons in rear taking up, without specific orders to that effect, the cadence and formation of the next preceding escadron. When in this formation, the regiment can easily change direction, take advantage of the ground and surmount obstacles. If ditches with marshy borders have to be taken, it is advisable first to execute escadrons front into line. By wheeling into line by platoons, the column of platoons is quickly rendered ready for action to a flank, and for this and the previously mentioned reasons, it is especially adapted for executing flank The weakness of the movements. column in the direction of march requires that special measures be taken to protect its head.

0+ -30 " Platoon Distance 60×

Plat Dist . plus 6 paces

Column of platoons is not a suitable formation for a frontal movement against the enemy, as it is difficult to deploy the column in that direction.

Double Column.

The necessity of protecting the head of the column of platoons, quite naturally leads to the formation of double column. In this the escadrons, each in column of platoons, are two and two abreast with an interval of six paces between them, the distance between successive escadrons being platoon distance and six paces. With an uneven number of escadrons, the left column, in which the base escadron is posted, is the stronger. The double column is the mean between column of platoons and regimental column. It possesses the great mobility of the latter without being encumbered with the depth of the former, and can deploy as readily to the front as to a flank. Moreover, it has the same advantages formerly possessed by columns that had wheeled to a flank. For this reason, the double column is especially adapted for flank movements, particularly when two "waves" are to be formed for a charge.

Although the advantages of the double column are especially apparent in six-escadron regiments, some objections are raised against it by the Austrians. For example, it is stated, "that on account of the noise, commands can be heard with difficulty only; that the deployment (in a sixescadron regiment) is, in reality, restricted to the head of the column; and that the latter invariably forms the objective of the hostile attack. The area of burst of a shrapnel covers the entire space occupied by the double column, and a single good hit by such a projectile might perhaps suffice to disperse the column. In spite of this, the double column finds more advocates and more frequent application than it deserves." *

^{*}v. WALDSTÄTTEN, Taktik, I, p. 97.

6. Route Column.*

When the regiment is in column of twos or fours, the escadrons follow each other at 10 paces (8 m.) distance (in Russia at platoon distance). To form line from these columns is difficult and time-consuming on account of their great depth. For this reason, special protection is necessary. Large units will, as a rule, march in column of fours, the deployment being accelerated by a timely execution of platoons front into line. The units in rear of the leading element must assume—independently and without awaiting orders—the formation taken up by those in front. On the march, commanders of escadrons and of platoons ride wherever their presence in supervising their organizations is required. A trumpeter rides at the tail of the column in order to blow "clear the road," this being the signal for clearing one side of the road.

The field train marches at the tail of the regiment in order that it may not interfere with the deployment when the enemy is encountered. When the regiment marches alone, it may be advisable to let the field train march at some distance in rear.

Depth of a regiment:

Germany (4 escadrons):

In column of fours (with combat train) $530~\mathrm{m.}$, in column of twos $1{,}010~\mathrm{m.}$

Austria (6 escadrons):

In column of fours 723 m., in column of twos 1,493 m.†

Line of route columns may be used on the battlefield by a large unit, for the purpose of taking advantage of accidents of the ground, for crossing difficult terrain, and

^{*}Par. 348, German F. S. R.

[†]For details see p. 903, supra.

for minimizing losses when exposed to frontal artillery fire. This formation is taken up, for example, from line of escadrons in columns of platoons, by one, several, or all of the escadrons forming route column, while maintaining their relative positions with reference to each other (open formations). Intervals and distances may be given up when crossing ground swept by the enemy's fire. Close order formations are resumed as soon as the dangerous zone has been crossed or the position from which the charge is to be made has been reached. This formation in line of route columns is, however, unsuitable when an encounter with hostile cavalry is imminent. Since it is difficult to gallop in column of fours (closed up), it would perhaps be desirable to form line of platoons or half-escadrons in columns of twos, in which the horses can gallop with greater ease.*

France: Line of platoons in columns of fours (Ligne de pelotons par quatre), i. e., the four platoons, each in route column with the distance between fours increased to 1.50 m., are abreast of each other at diminished or normal intervals.

(b) MOVEMENTS OF THE REGIMENT.

The regiment marches to the front, to the rear, and to a flank (usually for short distances only, by wheeling into column by platoons), in the same manner as the escadron. It changes direction, when in column, by turning, by marching on a new objective, or by simply following in trace. Considerable changes of direction (i. e., those exceeding 45 degrees) require a different procedure when the regiment is in line or in line of escadrons in columns of platoons.

^{*}For riding in this formation, see v. Edelsheim, \hat{U} ber kriegsmäszige Ausbildung usw., p. 174.

[†]Revue de Cavalerie, July 1908, l'Anarchie.

Line of platoons in columns of fours is called *le bloc* when the interval between platoons is 4 m., and *le carre* when that interval is 8 m. Intervals of from 12 to 16 m. are recommended for crossing difficult terrain, and intervals of 25 m., for crossing fire swept ground.

Pars. 135-169, German C. D. R.

When the regiment is in line of escadrons in columns of platoons, for example, and a considerable change of direction is to be executed, all the escadrons first change direction, those in rear of the first then moving by the shortest route to their new positions abreast of the leading escadron. (See plate p. 921). When the regiment is in line and a considerable change of direction is to be effected, the regiment first wheels into column of platoons and then executes front into line. Under certain circumstances, it may be advisable to have the escadron on the inner flank in line change direction at once, the other escadrons then moving by the shortest route to their proper positions in the new line.*

Deployments.

The regulations make a distinction between development,† deployment,‡ and front into line.¶ The term development denotes the transition from route column to column of platoons, double column, or regimental column. The term deployment denotes the transition to line of escadrons in columns of platoons. The term front into line denotes the transition to line. The term transitions is used to designate all other changes of formation. Transitions to a broader formation are executed as a deployment, transitions to a narrower formation as a ployment. (Par. 45, German C. D. R.).

Changes of formation must likewise be capable of being executed while the march direction of the entire regiment is changed simultaneously therewith. For example, when the regiment is in double column or in regimental column, the leading element of the regiment executes a turn in the new direction; when the regiment is in any other

^{*}In Austria changes of front are effected in a very awkward manner on fixed pivot when the regiment is in line of escadrons in columns of platoons.

[†]Entfaltung.

[†]Entwicklung

[¶]Aufmarsch.

[&]amp; Übergang.

formation, the head of each escadron executes such a turn, the new formation being ordered, in either case, while the movement is in progress. The escadrons are then led by the shortest route to their proper positions. The guiding principle is, "First determine the march direction, then the formation." (Par. 168, German C. D. R.).

In Russia, the 1st, 2d and 3d escadrons habitually place themselves to the right, the 4th, 5th and 6th habitually to the left of the leading element.

In France, when deployments and changes of formation are to be executed, the regimental commander, followed by the standard bearer, moves in the new direction for thirty paces and then orders the new formation. The escadions then move by the shortest route, by obliquing, by partially changing direction, or by moving by the flank to their positions. When deploying preparatory to a charge, it is considered advisable to decrease the gait in order to obtain better cohesion.

Being in regimental column, or in double column, to form line of escadrons in columns of platoons: When the regiment is marching, the escadrons extend (in the reverse movement, they close) on the base escadron. When the regiment is halted (necessarily in a covered position, if the charging ground in front is limited), the escadrons on the right wheel to the right, those on the left to the left, by platoons, gain the necessary ground at the trot and wheel again to the front by platoons and move to their positions. The escadron on which this movement is executed moves forward a distance equal to platoon front plus six paces.

Being in column of platoons, to form line of escadrons in columns of platoons: The leading escadron rides forward sixty paces at the gait ordered and then comes down to the walk. Each of the other escadrons changes direction and moves to its proper place. (Par. 143, German C. D. R). When this movement is to be executed so that, at its conclusion, all the rear escadrons will be on one side of the leading escadron, a special order to that effect must be given.

Being in column of platoons, to form line of escadrons in columns of platoons to a flank: Each escadron changes direction.

Being in route column, to form line of escadrons in columns of platoons: The leading escadron executes platoons front into line, each of the others changes direction, forms column of platoons and moves to its proper position.

(c) TRANSITIONS TO NARROWER FORMATIONS, AND PLOYMENTS.

Being in line, to form line of escadrons in columns of platoons: Each escadron forms column of platoons.

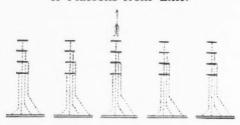
Being in line, to form double column or regimental column: The base escadron forms column of platoons, the others likewise form column of platoons and move to their proper places.

Being in line, to form column of platoons to a flank: The regiment wheels into column by platoons.

Being in line of escadrons in columns of platoons, to form column of platoons to a flank: The escadron on the flank toward which the movement is to be made wheels into line by platoons in the direction in which the column is to face and then forms column of platoons; the other escadrons conform to the movement.

Being in line of escadrons in columns of platoons (or in double column), either at a halt or while marching, to form regimental column: The escadrons close in on the base escadron.

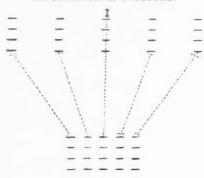
The transition from regimental column to double column and to column of platoons to the front or to a flank, is executed according to the principles already mentioned. The Regiment Forming Line of Escadrons in Columns of Platoons from Line.



The Regiment Forming Column of Platoons from Regimental Column.



Transition from Regimental Column to Line of Escadrons in Columns of Platoons.

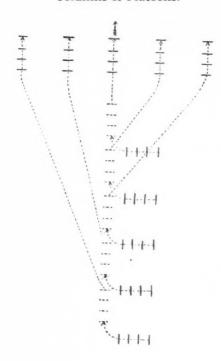


Example of a

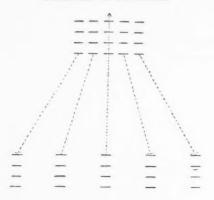
Considerable Change of Direction Effected by the

Regiment while in Line of Escadrons in

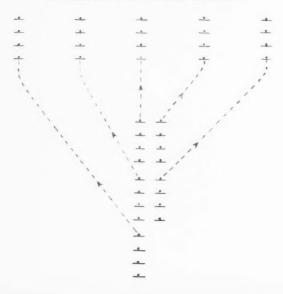
Columns of Platoons.



The Regiment Forming Regimental Column (while in motion) from Line of Escadrons in Columns of Platoons.

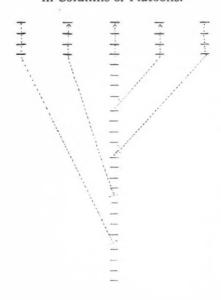


The Regiment Forming Line of Escadrons in Columns of Platoons from Double Column.



(d) MOVEMENTS IN COLUMN AND IN LINE OF COLUMNS.

Transition from Column of Platoons to Line of Escadrons
in Columns of Platoons.



(e) TRANSITION TO LINE.

Line may be formed in the simplest and most orderly manner from line of escadrons in columns of platoons and from column of platoons, by executing front into line in the former case, and by wheeling into line in the latter. On account of the depth of the route column and of the column of platoons, the escadrons will frequently not be able to move out at once when the command front into line is given. The leading escadron forms front into line at once, each of the others changes direction and gains sufficient ground to the flank to enable it to execute front into line and to move straight to the front. In close proximity to the enemy, the

regiment, when in column of platoons, will frequently be able with advantage to change direction and to wheel into line by platoons.

Line is formed from line of escadrons in columns of platoons, by all the escadrons simultaneously executing front into line. When the regiment is halted, or when marching at the walk, this movement is executed at the trot; when marching at the trot, it is executed at the gallop; when marching at the gallop, it is executed at an accelerated gallop. As each escadron executes right and left front into line simultaneously, it may happen, when the intervals are too small, that the exterior platoons of two adjacent escadrons collide. (Par. 260, German C. D. R.). Being in line of escadrons in columns of platoons, to form line in an oblique direction: The escadrons first partially change direction, each then executes front into line, and moves to its place in the new line.

Front into line from regimental column* is not so very simple, if time and room are lacking for first forming line of escadrons in columns of platoons. It may, however, frequently become necessary to form line from regimental column.⁺ Each escadron executes front into line separately,

^{*}The regulations do not prescribe how front into line from regimental column is to be executed. General v. Schmidt, in his Instruktionen, p. 197, says: "It is of the utmost importance that as broad a front as possible be presented at once to the enemy, either in the direction in which the column is facing, or, after the leading element has changed direction, toward the objective." Execution: "The right and the left flank escadrons execute right front into line and left front into line, respectively, and then move out for the purpose of making a flank attack on the enemy. The escadron next in line on the right and the one next in line on the the left then promptly execute right front into line and left front into line, respectively. In this manner, all the escadrons but the one in the center (if the regiment consists of five escadrons), are deployed."

[†]At Worth, the 13th Hussar Regiment, while in regimental column, wheeled about by platoons on sighting French cavalry, and charged directly from its position, as neither time nor room was available for forming line. The rear platoons moved out of the column and turned against the flank of the hostile cavalry. Kunz, Reiterei, p. 50.

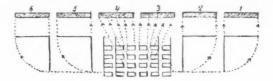
Two escadrons of the same regiment attacked French cavalry that was debouching in column from Gautier (Sedan). The leading platoons of the two escadrons mentioned, charged; the remaining six platoons moved to the rear to gain room, executed front into line and then charged in echelon formation from one flank. *Ibid.*, p. 198.

as follows: The base escadron, on which the extension is made, as soon as it has room for forming line; the other escadrons, as soon as, by changing direction, they have gained sufficient interval to the right and left front, respectively. Each one of these escadrons, as soon as it has formed line, then places itself abreast of the base escadron, whose subsequent conduct is determined by orders. This procedure is accurately adapted to that of the regulations. The certainty of its execution in a critical moment is assured because the deployment is effected in the same manner as if time had been available for first forming line of escadrons in columns of platoons and then executing front into line, except that in this procedure the several movements shade more closely into one another. If a special form of executing front into line were prescribed for this deployment, there would be danger of misunderstanding and of friction that might impair the success of the charge.

France: The right and left center escadrons execute right front into line and left front into line, respectively. The right and left flank escadrons gain the necessary deploying interval by changing direction, and then execute right front into line and left front into line, respectively.

Austria: The two center escadrons move forward a distance equal to the depth of the column and execute front into line. The remaining escadrons gain the necessary interval and each then executes right front into line or left front into line, as the case may be, depending upon whether it is to the right or to the left of the base escadron.

Russia: According to the Russian regulations, the flank escadrons wheel toward the outer flanks by platoons, each escadron then wheeling to the left or right, as the case may be, as soon as it has gained sufficient ground, and marching in line to its place. The right and the left center escadrons execute right front into line and left front into line, respectively It will, at best, take considerable time to form a broad front in this manner.



(f) TIME REQUIRED FOR DEPLOYING.

Control of time and space is of prime importance to the leader when leading troops on the terrain. Prompt and correct recognition of the point where the collision with the hostile cavalry will take place, in many cases determines the mode of deployment, i. e., whether the deployment is to be made forward or by the flank. If by the flank, the leading element is halted. While the deployment forward, which includes covering part of the distance to the enemy, frequently contains the element of surprise, it always results in increasing the morale. One will choose this mode of deployment, if one may hope to encounter the enemy while he is still in the act of forming line. To halt the leading element and to deploy by the flank saves time, room and energy. The deployment by the flank will be used when unfavorable terrain is located in the immediate front; when one can compel the enemy to charge uphill, over very soft ground, or on difficult terrain; and when one desires to give one's artillery time to produce some effect. In respect to the feasibility of making evolutions in the presence of hostile cavalry, General v. Schmidt lays down the rule that the leader of the first line must be finished with all deployment by the time he has approached to within 500 paces of the enemy; that wheels to a flank by platoons can still be made at 600 paces; and that more extensive flank movements are possible at 1,000 paces.

A cavalry regiment, provided platoons consist of twelve files each, requires 80 seconds at the trot and 40 seconds at the gallop to form column of platoons from column of fours. When the units have to execute front into line successively, these figures are increased to 240 and 120 seconds, respectively. It takes 70 seconds at the trot and 50 seconds at the gallop to form line of escadrons in columns of platoons from column of platoons. To form line from line of escadrons in columns of platoons [each escadron executing front into line],

requires an additional 20 seconds, when executed at the trot, or 12–15 seconds, when executed at the gallop. It is thus evident that a cavalry regiment, in order to pass from route column to line toward the front, requires at the trot 170, at the gallop 105 seconds. When the escadrons successively form column of platoons (for example, on debouching from a defile), these figures are increased to 268 and 139 seconds, respectively. When signals are not used, the time consumed is still further increased by the escadron commanders' repeating commands. In 105 seconds, the hostile cavalry can cover 720 m., in 268 seconds, 1,750 m.

A knowledge of the time required for deploying will enable the leader to determine whether he has time enough to form line of escadrons in columns of platoons from column of platoons (i. e., whether he can deploy forward), or whether, in order to form line more quickly, he should have his leading element change direction and then have the whole force wheel into line by platoons. When platoons consist of sixteen files each, the regiment can form line of escadrons in columns of platoons from column of platoons in 70 seconds, the entire movement into line consuming 92 seconds (leading element at the trot). If we assume that, in addition, a space of 200 m. is required for fully developing speed for the charge, this mode of deployment should be used only if the two opposing forces are still at least 1,000 m. apart. For the leading element to change direction and for the platoons to wheel into line at the gallop requires about 60 seconds. This mode of deployment proceeds with considerably greater rapidity than the one first mentioned, and can still be employed when the enemy is from 600 to 1.000 m. away. A regiment that, while in column of platoons, encounters the enemy within 500 m., will not be able to count upon deploying all of its escadrons, but will be compelled to let them charge individually.

The time required for deploying may be computed as follows: If the leading element continues the march at the trot (300 paces per minute),

it will be overtaken by the last subdivision in x minutes, when the latter has covered 500 paces in x minutes. If we let I represent the depth of the column, we obtain the equation:

$$x \times 300 + 1 = x \times 500$$

 $1 = x (500 - 300)$
 $x = \frac{t}{500 - 300}$

In other words, the time, in minutes, required for deploying is equal to the depth of the column divided by the difference between the gait of the leading element and that of the rear subdivision. The result, to be sure, is but a rough approximation, which can have a conditional value only.

3. THE BRIGADE.*

The exercises of the brigade serve the purpose of training from two to three regiments for employment in one body as an independent tactical unit, and as an integral part of a cavalry division. The drill is concluded in the division. The importance of the brigade as a tactical unit has been enhanced by the employment of cavalry by wings (i. e., the tactical units abreast). The brigade will almost invariably be given an independent combat mission. The brigade commander, who will usually have ridden far in advance, will be able to communicate his intentions to his brigade only by means of bugle and visual signals and by means of orders transmitted through orderly officers.

When the brigade is in line, the regiments, each in line, are posted abreast of each other with an interval of fifteen paces between them. When the brigade is in column, the regiments are either abreast or in rear of each other. The following are the formations of the brigade:

^{*}Pars. 180-202, German C. D. R.

The brigade in line;—in line of escadrons in

in Regimental Columns. 120 13

columns of platoons; -in brigade column (the regiments, each in regimental column, abreast with an interval of 15 paces between them);*-in regimental columns (the regiments, each in regimental column, in rear of one another at a distance of 30 paces); +-- in double column (the regiments, each in double column, in rear of one an- Double other). The employment of the double column, Column the regiments in rear of one another, appears to Platoons. be particularly profitable when, in charging infantry, two successive lines are to be formed toward a flank. The brigade may likewise be it formed in double (or treble) column of platoons [the regiments, each in column of platoons, abreast of one another]. The brigade column, the brigade in regimental columns, the double column, or the double column of platoons should be used for assembly. These formations do not permit deployment with sufficient ease to make them suitable for movements under hostile fire and when an encounter with hostile cavalry is imminent. The double column may frequently be employed preparatory to a charge against infantry. In other cases, the leader will apply par. 192, German C.

Brigade in

111

1 16 30"

^{*}General v. Bernhardi, says: " This is the popular and favored maneuver formation of all cavalrymen of the oldest pattern. It should, of course, not be allowed to appear on the battlefield at all. It might profitably be replaced by the line of regiments in double columns at deploying intervals."

[†]When regiments consist of four escadrons each, it is possible to wheel into line toward a flank—this, to be sure, only at the expense of the interval between the regiments.

D. R., which states: "Moreover, the brigade commander is not debarred from grouping the regiments (each in some formation prescribed for it), in such a manner at any time, as, in his opinion, the situation and his intentions require." This means that the brigade is to be led forward according to the terrain and the purpose of the action. For example, the regiments may be formed in regimental columns or in double columns with deploying interval between them, either on the same line or in echelon, abreast of each other. The regiment on the left flank of the brigade is designated as the base regiment, or some unit is directed to maintain contact. All the others conform to it in their movements and measures.

The brigade may, in addition, be formed in column of platoons (with platoon distance plus 15 paces between regiments), and in route column (with twenty paces distance between regiments).

Deployments. (Par. 195, German C. D. R.).

When the regiments are abreast of one another without deploying interval, they deploy right front into line and left front into line respectively. When they are abreast with deploying interval between them, each regiment deploys as if alone, i. e., each regiment deploys by executing, simultaneously, right and left front into line.

When the regiments are in rear of one another—the brigade in regimental columns, or in double column—the leading regiment deploys left front into line, the rear regiment right front into line.

Transitions. (Par. 196, German C. D. R.).

"A. Transitions within the regiments, without change in their relative positions:

"(a) When the regiments are in rear of one another and retain their relative positions:

"Ployment: Transition to narrower front:	1. 2. 3.	From brigade in regimental columns to double column; From brigade in regimental columns to column of platoons; From double column to column of platoons;	The rear regiment halts until disen- gaged.
"Deployment: Transition to broader front:	5. 6.	From column of platoons to double column; From column of platoons to brigade in regimental columns; From double column to brigade in regimental columns;	All these transitions are executed as prescribed for a regiment acting alone.

retain their re	1		The base regi-
"Ployment Transition to narrower { front:	1.	From line to brigade column;	its base esca-
	2.		ment on the
	3.	From line of escadrons in columns of pla- toons to brigade column;	reduce the distance to be traversed by it, may form on its
	4.	From line of escadrons in columns of pla- toons to double col- umn of platoons;	inner flank-esca- dron, at the com- mand of its regi- mental com-
	5.	From brigade column to double column of platoons;	mander, and then, if neces- sary, move a- breast of the base regiment.*

^{*&}quot;The new formation would, in the above cases, be taken up more expeditiously, if the base regiment would likewise form on its inner flank-escadron. This, however, would mean the abrogation of the principle laid down for the base regiment. No sound reason existed for doing this, in view of the advantages of uniform principles and the insignificant increase in the distance traversed by the base regiment when moving as laid down above." v. UNGER.

"Deployment: Transition to broader front:

"Deployment:

Transition

front:

to broader

6. From double column of platoons to brigade column;

The right regiment forms to the right front, the left regiment to the left front.

"(c) When the regiments are abreast of one another at deploying interval* and retain their relative positions:

"Each regiment executes the transition within itself, as prescribed for a regiment acting alone.

Transitions that change the relative positions of the regiments, one to the other.

"(a) When the regiments are in rear of one another and move so as to come abreast of one another:

> mental columns to I ment moves to brigade column;

2. From double column

to brigade column;

3. From column of platoons to brigade column;

[1. From brigade in regi-] The rear regithe right front and forms on the right of the leading regiment: The leading reg-

iment forms to the left front. on its leading escadron; the rear regiment moves to the right front and forms to the right front on its leading escadron.

^{*}Par. 192, German C. D. R.

"(b) When the regiments are abreast of one another and move so as to come in rear of one another:

1. From brigade column to brigade in regimental columns;

"Ployment: Transition to narrower front:

- 2. From brigade column to double column;
- 3. From brigade column to column of platoons;

The base regiment moves out (and ploys) first, the rear regiment conforming to the movement as soon as disengaged. Until disengaged, the rear regiment halts, as otherwise the transition would consume too much time.

"Route columns have not been considered. Neither is a discussion given of the transition from line to line of escadrons in columns of platoons, nor from the latter formation to line of double columns at deploying interval, as no change takes place."*

Foreign cavalry drill regulations prescribe, in the main, the same formations. It does not seem necessary to prescribe specially the formation in which the regiments are abreast with deploying interval between them, as is done, for example, in France and Italy. The German deployment into line of escadrons in columns of platoons from brigade column, on the center (i. e., on the first escadron of of the left regiment), proceeds more rapidly than if the regiments, each being in regimental column, were first to extend to deploying intervals and then to form line of escadrons in columns of platoons.

It takes about four minutes to form column of platoons from column of fours and eight minutes to execute the same movement from column of twos, when the platoons simul-

^{*}Supplements Nos. 4 and 5 to Militir-Wochenbiatt, 1909. p. 179.

taneously execute front into line (their leading elements coming down to the walk). For the brigade to pass at the gallop from column of platoons (each platoon consisting of sixteen files) to line consumes at least four or five minutes when signals are used. The time consumed is considerably increased, due to the repetition of commands, when the movement is executed by command.

General v. Verdy computes that a brigade with a horse battery requires 7 minutes at the trot and 4 minutes at the gallop to deploy from column of threes into two lines; that a second brigade (with a horse battery) following the first in like formation, requires 14 minutes at the trot and 8½ minutes at the gallop for this purpose, *

4. THE CAVALRY DIVISION AND THE CAVALRY CORPS.†

The division consists, as a rule, of three cavalry brigades, one battalion of horse artillery with light ammunition column, one machine gun battery and one pioneer detachment.

It may become necessary, during the operations as well as on the battlefield, to combine several divisions into a cavalry corps. The depth of an army corps in route column requires that, in approaching the battlefield, each division, at least, be assigned a separate road.

No fixed formations are perscribed for a cavalry division. The division commander, by making proper disposition of the tactical units, forms his division in each case according to the end in view.

^{*}Studien über Truppenführung. Die Kavalleriedivision, I, p. 100 †Pars. 203-221, German C. D. R

Assembly Formations.

Division in Brigade Columns.	Division in Regimental Columns.	
ily y ₂	1,16 à	
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	11.0	
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The choice of an assembly I formation is governed by the extent of the available room. When the available space is very deep, and especially when the division is about to begin a march in close formation, it will frequently be a good plan to use the treble column of platoons (the brigades, each in column of platoons, abreast of each other at intervals of 15 paces). When the division is in regimental columns, the regiments are in rear of one another at a distance of 30

paces. The space required by the division in this formation, when the horse batteries and the pioneer detachment are not present, is about 65 m. wide and 400 m. deep. When the division is in brigade columns, the brigade columns are in rear of one another at a distane of 50 paces. When in this formation, the division requires a space 140 \times 200 m.

On the battlefield, the formation of the division depends upon the situation and the terrain. The formation in groups enhances readiness for combat and, under certain circumstances, reduces losses. So long as the subdivisions of the division march in rear of one another, the rear subdivisions conform to the formation and gait of the leading subdivisions without specific orders to that effect. The greater the depth of the division, the greater the importance of keeping it in uninterrupted motion by maintaining a uniform cadence and by other requisite measures, and of preventing elongation of the column. The leading

unit follows the division commander until a march direction is assigned to it. An officer of the leading brigade (after the development, an officer of the base brigade) must be permanently charged to keep the division staff in view.

The deployment of the division will generally be preceded by a development, i. e., the passage from column to a formation of broader front. When the division commander desires to develop the division (from route column or some assembly formation), he designates (in a development order) the brigade on which the development is to be made. as the base brigade and indicates its march direction. In this case, the brigades may be posted either abreast, on the same line, or in echelon. Intervals and distances are regulated by orders. Artillery and machine guns should be posted where their subsequent employment is most probable. When a change of direction is to be effected, the division commander indicates to the base brigade the new march direction, to which the others must conform by the shortest route. When haste is not necessary, the base brigade may decrease the cadence. The relative positions of the brigades to each other remain unchanged unless otherwise ordered. When more extended changes of front, for example to the right or left, become necessary, another formation is usually taken up.

The brigade commanders independently choose the formations in which their brigades are to move, being governed, in so doing, by the following considerations:

Utilization of accidents of the ground as cover;

Employment of formations that minimize the effect of the hostile fire; and

Degree of readiness for combat according to the distance to the enemy.

In the deployment, the brigade commanders independently make the necessary dispositions for distribution in depth and for flank protection.

5. COMPARISON BETWEEN LINE AND COLUMN.

The line is the only combat formation in which cavalry can charge in close order. In case of necessity only, when cavalry is surprised and can not form line in time, is a charge in column conceivable. The success of a charge depends upon the force of the shock (cohesion and speed) and upon the use of the *arme blanche*. The speed that is in the horses can be brought out in line only. Line only, permits all available sabers and lances to be employed.

On November 30th, 1808, the escadron of Polish Lancers detailed as Emperor Napoleon's body guard, and the remainder of that regiment charged in column of fours up the pass of **Somma Sierra** under cover of the morning fog and powder smoke, rode down the Spanish infantry and captured 4 batteries, posted in tiers, with 15 guns. The Lancers lost 6 officers and 80 men out of an effective strength of 7 officers and 150 men.*

At **Dembe Wielki**, March 31st, 1831, when the Russians had already made dispositions for the retreat, 12 Polish escadrons charged in column of sixes along the *chaussee* embankment under cover of darkness. They captured 4 guns, dispersed Russian infantry and repulsed a counter-attack made by Russian cavalry.

The charge at **Meslay** (engagement at **Monnai**, December 20th, 1870): See p. 165, infra.

Cavalry should never allow itself to be charged while standing still, for it would be crushed by the force of the shock. A charge in column is but a makeshift, since an equally strong and efficient cavalry force in line would be superior to the former on account of its formation alone.

During the battle of **Balaklava**, October 25th, 1854, a Russian cavalry mass under General Ryow and consisting of 2900 men formed in a single column, was thrown back by six weak English escadrons under General Scarlett. The English escadrons charged the front and flanks of the Russian column, the latter receiving the charge while halted. †

^{*}Kavalleristische Monatshefte, December number 1908.

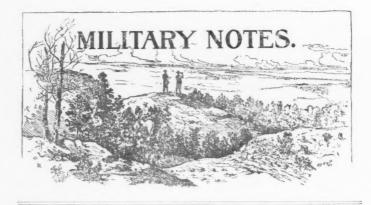
[†]KINGLAKE, Invasion of the Crimea, VII, p. 180.

The principle enunciated is directly responsible for the demand made on the cavalry for great mobility. But mobility is possessed neither by the line nor by the line of columns. This is due to the fact that changes of direction in these formations are awkward movements and that passable ground along the entire front is to be found only here and there for distances of any length. For this reason, the cavalry needs the column as a maneuvering formation. The column has the advantage of greater mobility in all directions than the line. It can change front and march direction more easily and can take advantage of accidents of the ground better than can the line. Moreover, it permits line to be formed quickly either to the front or to a flank. The column, in addition to possessing great mobility, must permit line to be formed in the quickest and simplest manner. This is the standard that determines the usefulness of the various columns on the batttlefield.

The deficient maneuvering capacity of the French cavalry at the beginning of this century, compelled the French to hold it together in dense masses, and was responsible for the introduction of the charge in column. "The principal foes of the column are disorder and unwieldiness, which are caused by the leaders' losing almost all influence over their units as soon as the column is moving at a fast gait. This disorder is augmented by dust and by natural obstacles. No one sees where he is going; an evasion of obstacles is not to be thought of; bullets drop into the column; here and there a horse and trooper break down, the others must press on over their bodies; the voice of the leaders and even the blast of the trumpet is lost in the thunder of hoof-beats, the rattle of arms, the roar of hostile guns; the column becomes a mob, which, at best, if crowded together, rushes along like a mass of wild horses. It may ride down, it is true, whatever is opposed to it, but nothing more, and no one can tell what will subsequently become of it. If, therefore, the enemy avoids the direct onslaught and falls upon the flank and rear of this unwieldy mob, from which all order and leadership have parted, the combat is bound to end with the defeat of the column." *

^{*}v. GRIESHEIM, Taktik, p. 309.

The line has another pronounced advantage over a column of equal strength-that of greater front, which enables the overlapping portions to envelop the enemy and to attack him at his weakest point, his flank. The line, however, has the disadvantage that its flanks are weak and require special protection (echelons posted in rear of the flanks) and that the danger of being pierced increases with its length (making supporting escadrons necessary). Cavalry that is charged in flank is just as sure to be defeated as cavalry that awaits the enemy's charge. In either case the counter-attack is wanting. As the flanks of infantry and artillery are likewise better objectives for a charge than the firing fronts, the efforts of the cavalry should always be directed toward gaining the exposed flank of the enemy. In doing this, however, the cavalry must take care that its own flanks are not exposed to hostile attack.



SINGLE OR DOUBLE RANK.

I N your issue for November, 1911, on page 562, occurs the following statement by Major H. T. Allen, General Staff U. S. Army: "It is extraordinary that the majority of our officers think that our present organization was the result of war experiences." While Major Allen does not make the statement that our single rank formation is not the result of our Civil War experience, this is the conclusion that I draw from the above statement.

Now I am not in a position to compile as much evidence on this quetions as is Major Allen, but so far as I have been able to investigate the subject, I arrive at the conclusion that it is extraordinary for any officer to think that the single rank formation is not the result of our Civil War experience. It is not necessary to prove that the cavalry of the eastern armies, both north and south, used the double rank. Almost everybody knows that the double rank was used by both of these armies all through the war.

Lieut. Col. H. M. Kendall, Soldiers Home, Washington, D. C., is my authority for the statement that the regular cavalry continued to use it till 1866 and General T. F. Rodenbough, Governors Island, N. Y., for the statement that it was used till 1867. General Adna R. Chaffee says that the single rank was used by the eastern cavalry when much depleted in strength.

The western armies must be considered separately. In the South, Morgan began to use the single rank from the beginning of the war and never used the double rank.

Forrest began to use the single rank soon after the beginning of the war and never returned to the double rank. But Forrest's cavalry must be regarded as the highest type of mounted infantry which resorted to shock action only on rare occasions.

Wheeler's cavalry began to use the single rank in 1863, (Campaigns of Wheeler and His Cavalry, p. 375). He wrote a set of Cavalry Tactics based on single rank, which were officially adopted by the Army of the Tennessee in G. O. 22, dated Dalton, Ga., February 17, 1864. In my humble opinion Wheeler had very few superiors as a cavalry leader.

In the northern armies of the west, Cooke's Tactics came into general use in the fall of 1864 and was used by the cavalry commanded by General James F. Wilson in his famous Selma raid in 1865. Although General Wilson reviewed this cavalry corps in double rank, this fact did not prevent the habitual use of single rank during the campaign. In a letter to me dated October 2, 1909, General Wilson says: "I should say, however, that up to the time I organized the Cavalry Corps, Military Division of the Mississippi, the Cooke Tactics were the standard tactics in use." He also says: "Of course Upton, who commanded my fourth Division, was my constant companion and advisor, and, as you well know, the service contained no abler tactician than he."

General Wirt Davis served with the Fourth U. S. Cavalry n the west during the entire war. He says: "In the spring of 1865 Upton drilled his division in single rank. All cavalry in the western army used single rank during Wilson's Selma raid."

Mr. E. N. Gilpin, who lives at 1429 Girard St., N. W. Washington, D. C., served with a regiment of Iowa cavalry all through the war. He says: "There was no uniformity in different commands as to single or double rank. First of al was the double rank. In the fall of 1864, the single rank began to be used. In the spring of 1865, during the Selma raid, all regiments used single rank tactics."

General Wilson dealt with big matters and such matters as instruction was left entirely to his subordinates of which Upton was the chief. I believe all modern students will agree with General Wilson as to General Upton's ability as a tactician; but as I am dealing with the evolution of the single rank, I will

consider Upton's Tactics later.

Cooke's Tactics were written by Colonel Philip St. George Cooke and officially adopted by War Department order November 1, 1861, and were published in 1862. Cooke acknowledges getting his ideas from conversations with Captain George B. McClellan who had just returned from the Crimean War and who had made a minute study of the cavalry of all foreign armies. On page 278 of his report McClellan recommends the use of single rank for our cavalry. Most of Cooke's Civil War experience was with western armies. After his war experience, he adhered to the single rank when rewriting his Cavalry Tactics in 1883. General W. Merritt reviewed these tactics and highly commended them. As a cavalry leader, the war, in my opinion, produced no superior to Wesley Merritt.

Upton's Tactics were written after his war experience both with the eastern armies where the double rank was used, and with the western armies where the single rank was used. In his tactics he adopted the single rank. Why? Surely not to make it assimulate with his infantry tactics. If this had been his object, he would have prescribed the double rank since the infantry always has used it. He must have adopted it because it gave greater rapidity of movement and celerity of formation after the shock.

At the time when the single rank was adopted in our service, the use of both single and double rank in the Civil War was fresh in the minds of all prominent leaders. There were still living most of them, and if they did not actively advo-

cate the change, they at least must have acquiesced in it. I assume that all cavalry officers were as much interested in the future of the cavalry service, at that time as they are at present, and it is inconceivable that they should quietly sit down and allow the single rank to be imposed on the cavalry service if they did not feel that it was for the best. "There were giants in those days."

Now the whole question of single or double rank is boiled down to this: Was it an evolution of the Civil War? If it was, then we should stick to it regardless of what may be the customs abroad or what may be the opinion of any European authority. In looking for opinions we should not go to such men as Wilson and Sheridan who only handled cavalry in large operation. We should go to such men as Wheeler, Forrest Upton and Cooke who made this matter a special study, and to such men as Merritt, Custer, Kilpatrick and others who were always found in the thick of the fray.

I hope the Cavalry Journal will not let this matter rest but will thrash it out for the benefit of the cavalry service.

The following list of officers were furnished me by General Wilson. Letters should be addressed to them asking if, in their opinion, the single rank resulted from our Civil War experience?

Colonel E. B. Beaumont, U. S. A., retired, Wilkesbarre, Pa.; General Henry E. Noyes, U. S. A., retired, Berkeley, Cal.; Major L. M. Hosea, Cincinnatti, O.; General E. F. Winslow, Fourth Iowa cavalry, 28 Rue de Madrid, Paris, France; General John W. Noble, Third Iowa Cavalry, St. Louis, Mo.; General Smith D. Atkins, who commanded one of Kilpatrick's brigades, Freeport, Ill.; Colonel Julian G. Dickinson, Adj. Fourth Michigan Cavalry, 46 Newbery Bldg., Detroit, Mich.; General O. H. La Grange, Colonel Wisconsin Cavalry, Old Soldiers Home, California.

Besides these, there are dozens of men now living who went through the war in the cavalry service. All cavalry officers should inquire of any of these officers who happen to be located conveniently asking the question. "Did the single rank result from our Civil War experience?" and send the result of their investigations to the CAVALRY JOURNAL to be compiled.

If the consensus of opinion is that it did, then to my mind the question is settled in favor of retaining it, if it did not so result, then there may be some reason for going back to the drill regulations of Frederick the Great.

ALONZO GRAY,

Major of Cavalry.

DOUBLE OR SINGLE RANK.

OUBLE rank was pre-eminently the formation of the Civil War. This is attested by the distinguished living officers of that war: Wilson, Gregg, Young and Rodenbough and by the present Assistant Secretary of War. It is provided for in Scott's tactics in 1826 and in Poinsett's (Secretary of War from 1837 to 1841) in 1841, 1855, 1861 and 1864, and it was likewise set forth in full in General McClellan's instructions for cavalry in the field in 1862. From 1841 to 1864, and for a number of years after the close of the war, the authorized regiment had five troops of ninety-six men each in ranks. The policy then of having no squadron (battalion) distances nor intervals was precisely what is now advocated. It would, therefore, seem that the regiment with five big troops in double rank without squadron (battalion) intervals and distances is fully entitled to be classed as American.

- 1. After the war there was only Indian warfare and this necessitated a wholly different use of cavalry from that demanded by war with nations in arms. For Indian warfare alone there was absolutely no reason for double rank, nor for many of the demands made on modern cavalry. That condition of affairs has changed.
- 2. The proposed regiment has not to exceed half the number of units of the present one, and it is handled almost exactly as is one of the three semi-independent parts into which the present regiment is subdivided; it is, therefore, clear that in general its handling must be far simpler than the present one. Ex-

perience fully confirms that. For militia and volunteer troops this advantage would be inestimable. The more experienced men in the front rank are valuable guides for the raw men in the rear rank. The inexperienced colonel would command one very large squadron instead of three small ones, assuming that the number of sabers in each case are the same.

3. Any portion of the earth's surface as large as a great State possesses practically all varieties of terrain. Whatever organization be adopted, it must have sufficient adaptability to permit its effective handling in all kinds of country. Contrasts of terrain exist in Europe as with us. Contrast for example the Alpine region with the plains of northern Europe the Balkan countries with the vast level expanse of much of Russia, the Virginia wilderness with the greater part of our country, especially those parts contiguous to our northern and southern boundaries. Single rank should not be abolished. When troops become greatly decimated, double rank would be useless.

In connection with the subject of terain, too great importance can hardly be attached to the facility and quickness with which the compact regiment may profit by the accidents of the ground for securing cover.

- 4. Experiments thus far have demonstrated the great readiness with which troops in double rank may be dismounted from practically any formation. To quicky seize and hold a given position on foot the advantage of this compact organization is manifest. The sum of the distances travelled by the dismounted troops in the proposed regiment is considerably less than in the case of the present regiment, and the time is decidedly significant. In general, the advantages of having the command well in hand are especially noteworthy for fighting on foot.
- 5. From well grounded information, it may be said that neither Europeans nor South Americans, nor Asiatics, have seriously contemplated adopting our present organization. Moreover, it is difficult to understand why one organization having relatively a greater number of field officers and a greater number of company officers should be relatively cheaper than another having a lesser number of each.

6. Under the proposed organization, majors would have fully as much or more command than at present, though in the field they would, as a rule, be less separated from the colonel and other elements of the regiment than at present. The close relation of the field officers to each other and the troop commanders is one of the great advantages of the proposed regiment. It avoids the squadron distances and intervals now so baneful to regimental mobility. Instead of having four small troops the majors would have three large ones. Their administration and control need not be in any degree different from what it is at present. As to numbers, the major's command should be increased, and as to administrative importance it would remain practically as at present. Majors would, therefore, gain by the proposed change.

In summing up the essentials to be considered in any cavalry reorganization, it is fundamentally important to give the captain a command worthy of his grade, and then to determine how many such commands a colonel can effectively handle, both mounted and dismounted. The lieutenant colonel's duties would be the same as at present, and similar to those of lieutenant colonels in all branches. Each major would have half of the total number of troops determined upon.

The advantage of large troops, both in economy of men detached from the combatant force and in the great saving in constructions of barracks, stables, blacksmith shops, kitchens, streets, sewers, etc., would be enormous.

It is unfortunate that where the trials have been made up to the present time few regiments have been able to form more than four large troops and in no case has it been practicable to maneuver more than one regiment at a given station.

Finally, if we are to consider our cavalry in its proper relation to modern warfare, on a scale that would actually take place, we must also experiment with organizations larger than a regiment. In these experiments as in all others, we should not lose sight of the fact that the standard of American cavalry for mounted action should be at least as high as that of any foreign cavalry; and for dismounted action, it should be at least equal to any foot troops man for man.

HENRY T. ALLEN, Major, General Staff, U. S. Army.

OUR CAVALRY DRILL REGULATIONS.

REGIMENTAL DRILL.

OUR present cavalry drill regulations seem to have been drawn up with the idea that the cavalry regiment shall have as little mobility as possible. As these regulations were promulgated years ago, only minor revisions having since been made, it is easily understood that the officers constituting the board were acquainted only with small posts and small garrisons, the latter seldom exceeding three or four troops at the best. Hence the idea of the board was that of carrying into regimental drill the systems of troop and squadron drill. But since the formation of new and larger posts, it becomes plain that the detailed formations of small units are not at all applicable to large bodies. Hence our regiments are so handicapped by drill regulations that instead of being mobile bodies they are singularly immobile.

As soon as our officers began to see regimental drill and spend part of the year's instruction on this drill it became apparent to them that the line formation had no place or use on the drill field. If a regimental commander now gets his regiment into line while drilling he should be at once ordered before a retiring board on the ground of eminent inaptitude and remarkable incompetency. There is as little use in forming a regiment of cavalry in line as putting a brigade of infantry into that formation. Consequently the column of fours should seldom be seen on the drill field. This is a marching formation and cannot be dispensed with quite so completely as the formation in line, but it might be eliminated from the drill field proper.

The line formation should be dropped from the drill book. Its danger is more than enough to overcome its occasional use in a street parade when the column of fours is formed into line to a flank for the passing of some local mogul in white hat and red sash. Its danger lies in this: We are rapidly approaching a time when our regimental commanders will be men of about sixty years of age. At that age they will be most likely to con-

tent themselves, when at regimental drill, with forming the regiment in line, wheeling by fours and then giving front into line. As the regimental front will be between one-half and three-quarters of a mile long the forming into line from column of fours will take some ten to fifteen minutes, considering the dressing, accurate alignment, etc. Follow this with the same movement to the opposite flank and then fifteen minutes rest and one or two repetitions of the same thing and we have our regimental drill hour gone. In such a drill there is less instruction in the real work of our profession than there would have been in leaving the command in barracks to play checkers or some other game requiring a modicum of sense.

The only formations suitable for rapid regimental work are the mass and platoon column formations. The latter is formation for mounted action (if ever we have any) while the former is for rapid marching close to the scene of action and dismounting for action with the rifle. Yet when we turn to our regulation we find no provisions for passing from one of these formations to the other. The most important, in fact the only important regimental formations and yet no means of getting directly into one from the other. Today if a regimental commander wishes to have his regiment prepared for modern war conditions he must drill his regiment in rapidly passing from mass formations to platoon column formations and vice versa. Yet he is prohibited from such drill by the statement in the drill book that all exercises not embraced in the drill regulations are prohibited.

If our present regulations were elastic and regimental commanders were familiar with mass and platoon formations we should find that there would be no need of changing our organization or even of the double rank formation. The mass and platoon column formations offer opportunity to the capable colonel that is not handicapped by many of the disadvantages of double rank. Familiarity with these formations will allow us to out maneuver most other cavalry organizations and the greater number of men in our organization will then assure victory. Leave the present organization alone and change the regimental drill. Of course there is little objection to introducing the double rank if any one desires it, but

with a proper appreciation of what can be done with mass and platoon column formations there is no need of the double rank.

The best way to change the regimental drill is to eliminate the commands as laid down in the drill book. Give a list of formations that may be used and then, something in the nature of the language of the drill book under *The Division*, say—"The orders of the colonel are communicated through staff officers or otherwise."

In the above, the line formations referred to are those as used in the drill book, not line of columns but the extended line. When we go to the brigade we find the same idea, that of forming the brigade in line. Nothing could be more absurd than the idea that the brigade will ever form line by drill commands as laid down. Who can conceive of any occasion arising where two or more regiments will be formed in line and then leave interval for the battery of horse artillery? The only statement necessary under the heading "The Brigade" is the first part of paragraph 813: "The drill exercises should be limited to movements used in campaigns." Paragraphs 815 to 827, inclusive, are useless, as well as 809 to 812, inclusive.

LOONEY TROOPER.

FORAGE AND FEEDING.

I N the January number of the U. S. CAVALRY JOURNAL is a very good and instructive article on "Forage" by Veterinarian G. E. Griffin, Third Field Artillery.

There are some points, however, on which, I should like to make a few comments:

On page 632, he begins to discuss corn as a horse feed, but although he has apparently had considerable to do with the feeding of corn, he does not give the particulars.

In my own practical experience, for I lived on a farm till I was twenty-two, we used ear corn very extensively for feed-

ing horses. Our horses were about the size and weight of the Light Artillery horses. As they were used both for draft and driving purposes, their work was also of a somewhat similar nature.

During the period of hard work in the sping, we fed oats largely, but varied this with an occasional feed of corn when a horse lost his appetite with the heat and fatigue. We also followed the same practice during the extreme heat in summer, on account of the heating character of corn as a food. When the work slacked up we returned to corn to keep the horses in flesh. In winter we fed corn almost entirely and supplied the protein element of their ration with the leavings of the clover hay from the cattle feed racks. The proverbial quality of oats to produce high spirits also led us to feed corn. A fractious horse is an abomination on a farm and many troop commanders find the same in their own corrals. With a ration of corn, and with that frequently reduced in winter time the horse received enough heat producing material to keep them in good shape.

I do not agree with Veterinarian Griffin that "Corn is indigestible for any horse." I have seen it fed year after year and the horses keep in proper condition. Very little undigested corn passed through any of our horses except in the cases of certain animals which we knew were greedy and given to bolting their grain. I have seen farmers put one or two rocks the size of a man's fist in the feed box to make the horse hunt for each mouthful and keep him munching all the while.

Here at Fort Sheridan just now, January 31, 1912, the roads have been slippery with snow and ice for a month and will continue so for about another month longer. Not a cavalry horse has been on the road all this time. Just the same the ration of oats is fed and the restless, chilly horses "take it out" on each other in the corrals, while if they were fed corn they would be better warmed and less excited.

I am inclined to take issue with Veterinarian Griffin's informant on paragraph 4, page 632. There is no animal of which I know of that digests corn so thoroughly as does the hog. In the corn belt, hogs are regularly allowed to run with

steers that are being fattened on corn and are confined to a feed yard. They will live high and keep in good health on what passes through the cattle. The story that hogs will feed on each others droppings is preposterous. No live stock are so neat in that matter as hogs, for they always deposit their droppings in one corner of their pen and carefully avoid that place.

I most heartily agree in condemning the practice of feeding only twice a day. The remarks on "Feeding," on pages 648 and 649 should be read and considered carefully. It is very probable that our practice on the farm of watering before feeding and of feeding three times a day was the reason for so little corn passing through the horses undigested, since Veterinarian Griffin complains so bitterly of the present army system of feeding being the cause of the presence of so much whole grain in the horses' droppings.

W. G. Lang Will, Second Lieutenant 27th Infantry. Bachelor of Scientific Agriculture, Iowa State College, 1908.

FIGHTING ON FOOT.

REGARDING fighting on foot by cavalry of other States, I beg to invite your attention to the following taken from a very interesting report of Captain Scott, 5th Field Artillery, concerning the German maneuvers of last year.:

"Great attention was paid to patrol work and apparently none to spectacular attempts. The infantry were not slow to say that the cavalry are really mounted infantry. The cavalry say they are much superior to mounted infantry, but admit that they depend more than ever before on dismounted fire action. The tendency in this direction was well shown on one occasion. The Red cavalry division got on the flank of the Blue right column, unobserved, and attacked from less than 1,000 yards with eighteen guns and ten dismounted squadrons. The remaining five squadrons remained mounted

as a reserve. It was a complete surprise to the blues. A better opportunity for a mounted attack could not have been desired. However, the attack as carried out was fully approved by higher authorities. Some hours later this division found itself on the flank of the victorious Blues, who were on the point of carrying the Red position. It looked like that the psychological moment one reads about, and there seemed nothing to prevent, but again ten squadrons dismounted and advanced to the attack. The halt sounded before their attack was well organized, and the exercise ended. Not much doubt as to the conduct of the German cavalry in the next war."

Under the head of "Patrolling" he states as follows concerning the rising at the trot:

"Cavalry patrols were numerous and energetic, and covered great distances with remarkably little detriment to their horses. This was largely due to never going faster than a trot, unless in an emergency, and to patient, steady work with no attempt at hurry or dash. I am also inclined to think that rising at the trot is after all, a good thing, and conducive to sparing both horse and man. On one day I made forty-five miles myself, over all sorts of country, ending in such good shape that I was greatly surprised when I learned what distance had been covered. I am perfectly satisfied with the McClellan saddle and close seat neither would have been in such good condition."

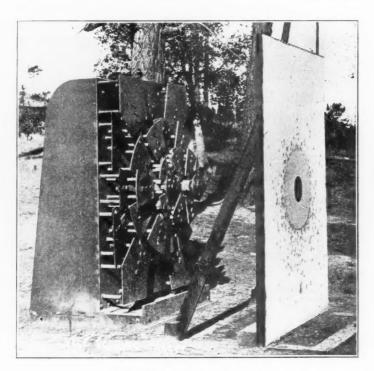
X.

THE ELLIS SELF SCORING TARGET.

A^T the School of Musketry, Presidio of Monterey, there has recently been tested a self scoring target, invented by Lieutenant Commander Mark St. Clair Ellis, U. S. Navy, the merits of which are established.

This target, as shown in the photograph, consists of a base on which is mounted the shuttle board; a spindle project-

ing through the center of the shuttle board; a series of designating plates or segments held rigidly in position by powerful radical springs which project from the center spindle; and a number of shuttles which are mounted on the shuttle board behind the segments, and which act as the circuit closing agency. These shuttles which are simply brass rods protected from the



THE SELF SCORING TARGET.

"splash" of the bullets by armored tubes, are held perpendicu larly against the rear faces of the designating plates by spiral springs. The shock caused by the impact of the bullet on one of these plates is absorbed by its radical spring and the shuttle is driven backward where it closes the circuit by passing between brass wipers. This causes the drop on the annunciator corresponding to the segment struck to fall. The shuttle

is returned to its normal position by its spiral spring and the circuit thus broken. The annunciator is cleared or set by pressing a button.

The designating plates are staggered and underlapping, those of the highest value being placed farthest to the front the "fours" next and so on. This insures the registration of the higher value should a dividing line of the target be struck.



AT THE FIRING POINT.

The "A" target gives definition for every hour on the clock in the "four," "three" and "two" sections and one definition for the bull's eye; also for every half hour and for all shots cutting a line, there thus being practically an infinite number of designations with a finite number of registering plates.

The "B" target will have thirty-three designating plates, nine of which will be for the bull's eye; target "C" forty-four

plates (also with nine for the bull's eye) and target "D" twenty-seven. This gives sufficient definition for every practical purpose.

One of Commander Ellis' targets has been in use at the Mare Island Navy Yard for over eight months and has been most favorably reported upon. Over seventy-five thousand rounds have been fired at it with practically no failures to register and no breaks of any nature. The target is in daily use and the designating plates, which are made of Vanadium steel, are as good as new.

Of the many advantages claimed for the self-scoring target, the immense saving in time insured by its use (about seventy-five per cent.), the elimination of pit details and its infallible accuracy will most strongly appeal to those who would use it.

AUBREY LIPPINCOTT,

Captain Thirteenth Cavalry.

LEST WE FORGET.

THERE are twenty-one officers on the active list today who have brevets for services in Indian Campaigns, viz:—Schuyler, Miller, W. H. Cruse, Smith, A. L. Morgan, Wilder, McClemand, West, Brown, W. C., Sibley, Day, M. W., Quilfogle, Slocum, H. J., Blocksom, Walsh, Hatfield, Taylor, C. W., Duncan, Van Orsdale, Sharpe, A. C., Mills, S. C.

All the officers above named except the last four won their brevets while serving as cavalry officers.

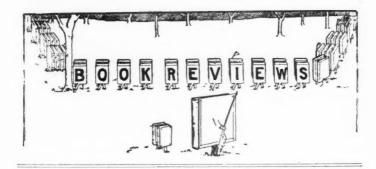
We take the following from the New York Evening Post of January 6, 1911:

AGES OF OFFICERS.

The accompanying table shows the average ages of the ten senior captains, and the field officers of each branch of the line, and including the engineers. It will be seen that the ages of the cavalry officers are higher than those in the other branches of the service. The ages of the cavalry officers were also higher in 1910, while the ages of the infantry colonels were highest in 1909. The coast artillery has the youngest colonels, lieutenant-colonels and majors, while the Corps of Engineers has the youngest captains. The table explains itself:

	Cols.	Lt. Cols.	Majors.	First 10 Captains.
Engineers	55 7-11	49 17-18	41 13-35	35 1-5
Cavalry	59 11-23	55 6-7	49 19-20	46 3-5
Field Artillery	55 4-9	48 4-7	42 15-17	36 1-2
Coast Artillery	55 8-23	48 6-19	40 49-56	38 1-5
Infantry	57 15-46	53 15-47	47 95-121	44 1-5

This is a sad showing, not only when considered as a reward for work done in the past, but also as a preparation for the future. Clearly the cavalry field officers are too old for their rank, and some method should be devised to eliminate those who are the least active, and it would by no means be going too far to give those who are retired an additional grade particularly those of exceptionally good records. In any war the cavalry must be the very first to move out and get in touch with the enemy, to raid, and to harass the enemy by cutting his lines of communication. Such work can be accomplished only by vigorous leaders. Must we wait until war is upon us before we place such men in command of squadrons and regiments?



Medical Service in Campaign.*

The first edition of this book has already been reviewed in these columns. The present edition contains much new matter and various changes looking to improve-

ment. No line officer can afford to be without this work, which is not a medical book but one which deals with the business and military administration of a department, which, with the division is numerically greater than that of all other divisional troops, has a column one and one-quarter miles long and needs over thirty acres to encamp, under official regulations.

There is a best way of handling these reserves and upon line officers devolves the responsibility for directing them what to do. Nobody else can do it and the day of miracles has gone by. It is a healthy sign of the times that the books on this subject are going through various editions as a result of more general appreciation of their practical value.

E. L. M.

^{*&}quot;MEDICAL SERVICE IN CAMPAIGN." A Handbook for Medical Officers in the Field. By Major Paul Frederick Straub, Medical Corps (General Staff), U. S. Army. Second Edition. 1912. P. Blaikston's Sons & Co., Philadelphia. Price \$1.50, net.

In "An Army Officer on Leave in Japan" Colonel Maus has given to the prospective tourist a most interesting itinerary of trips and scenes in Manila and Japan.

The Latifor has made his book more than an account of journeying by introducings historical sketches that are brief and well told. The list of special chapters, besides those on Spanish rule in Manila and the rise of Nippon, are on Japanese relations in the Chinese Boxer troubles, a summary of the Russo-Japanese War, national religions and the Japanese Army and Navy.

Colonel Maus refutes the popular impression that the Japanese Medical Corps was efficient to a degree never before reached in civilized warfare by numerous figures, that for instance of the 320,000 men that were returned to Japan for treatment.

The reader is left with a well developed and unsatisfied curiosity as to the author's special mission abroad.

The illustrations are not typical of the best types of native photographs and have been placed in the book without regard to the subject matter.

This is an invaluable book to the traveler to the lands described and a clear word picture to renew past impressions those who have visited and enjoyed "Dai Nippon."

E. T. E.

Machine Guns with Cavalry.† In this book, which is in the original German, the author informs us in the foreword that. while commanding machine gun detachments during the years 1907 to

1910, he participated in the settlement of the machine gun question in Austria-Hungary and also had an excellent oppor-

^{*&}quot;An Army Officer on Leave in Japan." By Colonel Mervin L. Maus, Medical Corps, U. S. Army. 1911. A. C. McClurg & Co., Chicago. Price \$1.50.

[†]Das Maschinengewehr im russisch-japanischen krieg und personlische Erfahrungen uber Kavallerie-Maschinengewehrabteilungen. The Machine Guns in the Russo-Japanese War and Personal Experiences relating to Cavalry Machine Gun Detachments; by Henry Viktorin, Captain Austrian Cavalry. Vienna, L. W. Seidel & Son, 1911. 144 pages, numerous cuts and illustrations; 6 x 9 inches. Price \$1.25.

tunity to inquire into the relative merits of the several types of machine guns.

In this book he discusses a series of very interesting problems and matters pertaining to cavalry machine grand achiments, especially their employment in army and cavally livision maneuvers, in training cavalry in reconnaissance service, and in general training of the manchie gun personnel. The author describes the great role played by machine guns in the Russo-Japanese War in a study, in the composition of which he consulted all available works so far published dealing with that war. The book is a compilation of military historical examples of the employment of machine guns in the differet battle situations and is especially suited for instructing machine gun detachments by using the applicatory method.

Chapter I deals with Machine Guns in the Russo-Japanese War—the role played by them; which method of transportation has proved the best; the amount of ammunition used.

Chapter II deals with the employment of Cavalry Machine Gun Detachment No. 3 during the Imperial maneuvers of 1908.

Chapter III deals with the employment of the same detachment during the maneuvers of the Landwehr Cavalry Brigade, Colonel Tarlowski, in May, 1909.

Chapter IV discusses Major General v. Czerliens "Cavalry Studies" in so far as they relate to Cavalry Machine Gun Detachments.

Chapter V deals with the training of Cavalry Machine Gun Detachments.

Twenty-one reproductions of photographs taken from nature are appended to the book; four of these show cavalry machine gun detachments equipped with wheel mounts, system Maxim, and seventeen showing detachments equipped with probable mounts, system Schwarzlose.

HARRY BELL.

Star Pocket-Book.*

The Star Pocket-Book is a small work. 4 in. x $5\frac{1}{4}$ in., of eighty pages that is a simple and clear guide for finding one's way at night by the stars. After giving

some preliminary instruction, it is devoted to the subjects of identifying the chief stars; notes on the nomenclature of stars, star tables, which give the greater stars in their order of magnitude, where found and the constellations to which they belong; notes on the planets; notes on the star plans or maps, followed by the star plans, fifteen n number; three methods of determining a north and south line; ia summary of the directions and several tables, such as the time of the year when certain stars cross the meridian at midnight, the time between the rising or setting of stars in various latitudes, etc.

It is well printed, the star maps are clear and distinct and it is bound in stiff board backed with cloth.

Care of the Cavalry Horse †

This is a small pamphlet of sixteen pages which was compiled for the use of Troop 1, Squadron "A", National Guard of New York. As far as it goes, it is an useful and instructive little compilation for the cavalry of the National Guard. It covers the subjects of feeding, watering,

grooming, fitting the bridle and other equipments and the more simple treatment for the ordinary ailments, such as sore backs, colic, heat exhaustion, rope burns, scratches, sprains, etc., and the care of the horse in general when on active service.

It should be in the hands of the cavalry of the militia and it would be of use, also to the non-commissioned officers of the regular service and possibly of some of the younger officers, as well.

^{*&}quot;THE STAR POCKET-BOOK OR HOW TO FIND YOUR WAY AT NIGHT BY THE STARS." By R. Weatherhead, Naval Instructor, R. N., with a foreword by Sir Robert Ball, Professor of Astronomy at Cambridge. 1911. Longmans, Green & Co., London, New York, Bombay and Calcutta. Price, fifty cents, net.

t"CARE OF THE CAVALRY HORSE." By Sergeant William Macnaughton, Troop "1", Squadron "A," N. G., N. Y. Price \$9.00 per hundred copies.

Submarine Boat.*

The Norman W. Henly Publishing Company of New York has gotten out a chart of a modern submarine boat which gives a longitudinal section of one of the latest types of submarines. It purports to be

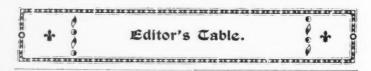
an accurate, drawn to scale deliniation of all of the parts of these complicated machines, if they can be so called. All of the parts are numbered and an explanatory reference list gives their uses. "To make the engraving more readily understood, all the features are shown in operative form with officers and men in the act of performing the duties assigned to them in service conditions."

Military Works.

We have received from L. W. Seidel & Son, of Vienna, their latest catalog of military books, the edition of 1912, in which are listed the latest foreign publi-

cations of a military nature. This firm has long been known to military students in this country and for those familiar with the German language, this catalog will be useful.

^{*&}quot;CHART OF A MODERN SUBMARINE BOAT," with 200 parts numbered and named. The Norman W. Henley Publishing Co., 132 Nassau St., New York. Price twenty-five cents.



THE STRENGTH OF THE CAVALRY.

Every patriotic American who correctly understands the situation must deplore the action of the House of Representatives on February 9th, in passing an amendment to the annual appropriation bill reducing the regular cavalry from fifteen regiments to ten. There seems to be a misunderstanding as to the relation of the cavalry to other arms and a failure to appreciate the necessity of a strong body of cavalry for our national defense.

Mr. Hay said (page 2000 Congressional Record, February 9th): "Mr. Chairman, I would not advocate this reduction if I did not believe that it could be safely accomplished without in any way imparing the strength and efficiency of the Army. I would not advocate it unless I had been told by officers of the Army that it could be done without in any way hurting or injuring the efficiency of the army."

Who were the officers of the army who told Mr. Hay this?

Out of the mass of misstatements in which this debate abounded we will select one as a subject of a few comments. Mr. Hay said (p. 2000 C. R.) "At the time the Army was reorganized (1901) there were twenty-five regiments of infantry and ten regiments of cavalry. We only added five regiments of infantry and five regiments of cavalry, whereas before that time there was only two-fifths as much cavalry as infantry." Mr. Burleson said (p. 2003): "The army wants more infantry and less cavalry." And the same member said (p. 2004): "Our cavalry is one-half as large as our infantry."

We now have one-half as many regiments of cavalry as there are regiments of regular infantry, but the legal limit of the strength of a troop (company) of cavalry is one hundred while the legal limit of strength of a company of infantry is one hundred and fifty. The actual strengths contemplated on a war footing are, we believe, 86 and 142; and, as the number of companies to the regiment is now the same in both. the strengths of the regiments will bear approximately the same ratio. And the regular infantry does not comprise all the infantry we have. There has been a remarkable development of the Coast Artillery since the SpanishWar and we now have one hundred and seventy companies of that arm. As it is inconceivable that all of our sea coast forts will be atacked at one time it is probable that the greater part of our Coast Artillery will always be available for service as infantry. There has also been a remarkable expansion of the U.S. Marine Corps and we have in that corps a strong body of infantry which is available for service anywhere. We have additional bodies of infantry in the Porto Rico regiment, in the Philippine Scouts and the Philippine Constabulary.

Our second line of defense, the volunteers which would be organized for a war, could not be formed into cavalry readily. It would require over a year to make efficient cavalry from volunteers, and the time and difficulty necessary to accomplish this is increasing as we become less and less a nation of horsemen and riflemen.

Consequently, unless our cavalry is considerably increased over its present strength we will enter upon any war in which we may engage with a smaller ratio of cavalry to infantry than is considered proper by any foreign nation. It is not the policy of our government to maintain a large regular army in time of peace; but we should maintain a nucleus which can be expanded into an efficient army in time of war. The policy of this country heretofore has been to keep its regular infantry at a lower ratio to its war strength than other arms. This is shown by the reorganizations of the army which have been made at the close of each of our wars, at times when the relative difficulty of raising and training troops of the different arms was fresh in the minds of all.

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At the close of the Mexican War the strength of the regular Army was reduced from 30,890 to 10,320 but at the same time a new mounted regiment, the Mounted Rifles (present Third Cavalry) was added to the Army; this gave the reorganized Army three mounted regiments to eight of infantry, but as the mounted regiments were numerically stronger than the infantry regiments, the mounted troops were more than one half as strong as the infantry. After the close of the Civil War the regular infantry was greatly reduced but the cavalry was increased by four regiments (Seventh, Eighth, Ninth and Tenth). In 1880 we had ten regiments of cavalry and twentyfive regiments of infantry, but each regiment of cavalry had twelve companies while the infantry regiments had only ten: the cavalry in all had 120 companies to the infantry's 250; and as the cavalry companies numbered about sixty and the infantry about forty, we had considerably more than half as much cavalry as infantry. About 1890 two companies in each regiment of cavalry and of infantry were skeletonized, and from that time to the Spanish War the cavalry consisted of 100 companies and the infantry of 200 companies. During and shortly after the Spanish War, the skeleton companies were filled up, each infantry regiment was increased by two companies, the infantry was increased by five regiments and the cavalry was increased by five regiments. The increase of the cavalry was natural and in keeping with what had been done at the close of our former wars; it was to be expected in view of the facts that the cavalry had not been increased for nearly forty years and the wealth, population and international responsibilities of the country had greatly increased during that time. But the increase of the infantry after the close of the war was unprecedented: and it was remarkable that the infantry was increased more than the cavalry, since the infantry was increased 160 companies while the cavalry was increased only 80. This increase of the infantry is only to be explained by the fact that it was needed for immediate service in the Philippines. And although an increase was made in the regular infantry we really followed our policy of reducing the infantry at the close of war in that we mustered out our great

volunteer army, which was composed almost entirely of infantry.

Owing to the fact that the infantry was increased more than the cavalry, since the Spanish War, the latter has been only one-third as large as the regular infantry, while before that time it was more than one-half as large. Considering the Coast Artillery and the Marine Corps as part of our infantry, the cavalry is now only one-fourth of the infantry.

But the ordinarily accepted ratios of strength do not constitute the real guide in determining what the strength of our cavalry should be. The strength which our cavalry should have depends upon our actual needs and is to be deduced from a consideration of the work it is to perform in war. We do not maintain in time of peace an army on a war footing of a size sufficient to meet on equal terms any army by which we are likely to be invaded; and, after we find an invader actually on our shores, we will need months to develop an army from our great resources of men and materials. If we can throw a body of cavalry in contact with such an invading force—strong enough to beat the cavalry which accompanies it—we can then hamper its movements and restrict its operations to a limited area until we gain the time we need to raise the force of infantry which will ultimately aid us in defeating it. An example of this is to be found in the work of the Boers (who were mounted) during the first year of the war in South Africa. Our cavalry can do all that the Boers did and more. But the cavalry which is to blind, hamper and hold the invader must be ready at the outset. The war will not last long enough to give us time to create it. The strength it should have can be computed with tolerable certainty since we know the strength of the cavalries of other nations. Allowing for part of our cavalry being beyond immediate reach when needed (five regiments are now outside of the United States) it is estimated that we should have twenty-one regiments. If these regiments were grouped in time of peace in seven brigades of three regiments each it would go far toward ensuring uniformity of training and rapidity of mobilization. Part of this cavalry would doubtless be needed during the war for service with the infantry, as divisional cavalry; but our experience during the

Civil War teaches us that the greater part of our cavalry should be held in independent bodies.

WHY WE NEED CAVALRY.

- 1. The American Army should be organized with a view to resisting invasion, since it is contrary to the well-recognized principles of our institutions to act on the aggressive.
- 2. The earlier stages of a war against a powerful invading force would find us on the strategic defensive. The enemy would seek to bring us to decisive action while we, by a series of delaying actions, would seek to avoid decisive encounters until our volunteers could be mobilized and concentrated.
- 3. In order to successfully carry on such a campaign we should have a *mobile* force of sufficient strength to defeat any *similar* force which the enemy could send against us on their first expedition and then follow the enemy step by step, tormenting him, engendering uneasiness, discovering all his projects, and so to make him feel that every move on his part is under observation and that a resourceful commander will ever be ready to block his plans. Just in this manner did the mounted Boers block the English advance in South Africa for months and until a large force of English cavalry was sent against them.
- 4. All foreign nations which could, at present, have any reason for landing on our shores could, and judging from the past, would land a force of cavalry intermediate between that of Japan with at least 14,000 and Germany with about 28,000. This would be superior to any cavalry force which we could muster against them, since our regiments on foreign service would not be available.
- 5. "The amount of patient and persistent hard work required to convert 1200 untrained citizens, unaccustomed to the care of a horse or his use under the saddle, and wholly inexperienced in the use of arms, into the semblance of a cavalry

regiment in six months is known only to those who have done it."—Gen. Wm. W. AVERELL, Vol. II, page 429, B. & L. of the Civil War.

On May 20th, 1864, Gen. Grant sent the following telegram to Gen. Halleck: "Send all new cavalry equipped as infantry and mount veterans on their horses."

The fact that within the last few years there has been a marked decrease in the number of men who make a practice of riding for business or pleasure would add to our difficulties in raising volunteer cavalry at the outbreak of a war.

- 6. Various influences are at work in this country which are decreasing the demands for riding horses and it is sound military policy for the government to take steps for providing more demand for that class of horses, otherwise the gravest difficulty will be encountered in obtaining mounts during a war and those obtained will either have to be taken by force or paid for at enormous prices. Unless we keep a sufficient force of cavalry in time of peace to create a fair demand for suitable mounts, breeders will cease to raise that class of horses. It is within the recollection of all of us how England not only exhausted her own available horse markets during the Boer War but nearly exhausted our supply of suitable mounts; this at a tremendous loss to herself and entailing much loss of valuable time. We will have no such foreign markets available.
- 7. Should it be necessary to enter Mexico for the protection of American citizens, most of our offensive work must be done by mounted men. If we do not actually enter that country we shall probably require indefinitely, a large mounted patrol along the border.
- 8. We wish to make it clear that we are not working for selfish ends. An increase of our cavalry could most efficiently be made by keeping all units at war strength. A bill such as now proposed by Congress which will allow of our transfer to other branches of the service, with rank from previous commission would actually be a benefit to most of us but we must all view with alarm anything which would tend to blindfold our army at a time when the very existence of our nation might be threatened.

- 9. In our country with bad roads, difficult trails over rugged mountains and arid deserts, the proportion of cavalry to infantry must be greater than in European armies to perform efficiently the duties of security and information.
- 10. Cavalry duties today render it as highly specialized an arm in its own line as is the field artillery. The proper and only efficient ways of performing the duties of screening and reconnaissance are as important to be thoroughly taught as the conduct of cavalry in battle and cannot be learned in a few months, so that volunteer cavalry hastily raised, is not to be depended on except for orderly and escort duty.
- 11. While the brunt of the fighting must be met by the infantry, with its auxilliary arm the field artillery, they would be as blind men but for the knowledge of the enemy received from the cavalry reconnaissance.
- 12. In such duty as was and is being performed by troops on the Mexican frontier, cavalry is much more valuable than infantry owing to the rapidity of its movements, the distance covered and the far less degree of exhaustion experienced by the men in that hot, dry country. During the late troubles on the border the cry of all commanding officers was for "more cavalry."

During the Spanish-American War, in Cuba the cavalry fought on foot with the infantry with equal efficiency. It is a doubly valuable arm and when performing purely cavalry duty as scouts and advance screens, it has been ranked as the best in the world.

Of the regular cavalry available in this country thare are only 8,540. Mexico, a second rate power, has 7,318 regular cavalry and 5,000 mounted rurales.

An army in the field without sufficient cavalry is like a blind man in a fight.

To train a cavalry soldier properly requires at least two years and many authorities think three years.

A reduction of five regiments of cavalry, while it will effect a pecuniary saving, would so reduce the efficiency of any force we might be called upon to put in the field that it would be a measure of very false economy and would greatly lessen the results that could be obtained by even a large army of efficient infantry.

RELATIVE COST OF A REGIMENT OF INFANTRY AND A REGIMENT OF CAVALRY.

In compiling these figures we have endeavored to cut out any thing that could be considered as foreign to the uses of these two branches of the line.

The figures are taken almost entirely from the digest of appropriations, 1912.

It will be seen that the overhead charges are enormous and that the difference between the cost of a regiment of infantry and a regiment of cavalry as compared with these overhead charges is small.

Salaries of Secretary of War's Office	147,970	00
Salaries of Adjutant General's Office	781,950	00
Salaries of Inspector General's Office	12,560	00
Salaries of Judge Advocate General's Office	20,800	00
Salaries of Signal Office	25,800	00
Salaries of Q. M. General's Office	278,410	00
Salaries of Commissary General's Office	78,840	00
Salaries of Surgeon General's Office	166,288	00
Salaries of Paymaster General's Office	71,900	00
Salaries of Chief of Ordnance Office	91,760	00
Contingent Expenses, War Department	50,000	00
Stationery, for office	25,000	00
Postage War Department and its bureaus	500	00
Rented buildings, War Department	10,220	00
Contingencies of the Army	40,000	00
Army War College	10,000	00
Military information section	10,000	00
U. S. Service Schools	25,000	00
Contingencies, headquarters Military Departments	7,500	00
Ordnance Department, pay of enlisted men	317,356	00
Post Q. M. Sergeants	108,000	00
Additional length of service for Post Q. M. Sergeants	38,000	00
Commissary Sergeants	111,708	00
Additional length of service Commissary Sergeants	45,000	00
Pay: Clerks, Messengers, Laborers at Headquarters, Divi-		
sions, Departments, Posts commanded by General		
Officers	351,240	00
Officers, Staff Departments:		
Adjutant General's Office	110,500	00
Inspector General's Department	75,000	00
Quartermaster's Department	340,900	00
Subsistence Department	183,280	00
Medical Department	1,629,660	00

Ordnance Department	284,220	00
Pay Department	190,460	
Judge Advocate General's Department	55,000	
Retired Officers	3,362,850	
Retired Officers, active	70,000	
Retired enlisted men	2,147,670	
Miscellaneous Pay:	2,141,010	00
Hospital Matrons, Dental Surgeons, Contract Sur-		
	4 155 000	00
surgeon, Extra Duty, enlisted men, etc	4,177,692	
Regular Supplies Q. M. Department	8,333,387	
Incidental expenses Q. M. Department	2,100,000	
Barracks and Quarters	1,856,050	
Barracks and Quarters, Philippine Islands	600,000	
	11,023,615	06
Roads, Walks, Wharves and Drainage	449,315	
Water and Sewers	2,250,903	27
Equipment of officers' school at military posts	9,350	00
Construction and repair of Hospitals	450,000	00
Quarters for Hospital Stewards	10,000	00
Shooting galleries and ranges	125,985	00
Army War College	12,700	00
Medical and Hospital Department	700,000	
Library Surgeon General's Office	10,000	
Army Medical Museum	5,000	
Dental Surgeons	330,000	
Trusses, Artificial limbs, etc.	7,000	
Repairs of Army Medical Museum	10,000	
Ordnance Service	337,000	
Ammunition for Reserve Supply, Fire Arms and Salutes,	331,000	00
	500 000	00
military posts	500,000	
Repairs at Arsenals	536,400	
Mileage	600,000	
Military Post Exchanges, schools, etc.	40,000	00
Overhead Charges Total \$	45.540.540	45
Overhead Charges Total \$	45,749,740	45
Total enlisted force in organizations of the Army, including		
Signal Corps, Porto Rican Regiment and Philippine		
Scouts		
Regiment of Infantry, total enlisted	869	
Regiment of Cavalry, total enlisted.	854	
Percentage of Regiment of Infantry to total enlisted for	ce1.173	3%
Percentage of Regiment of Cavalry to total enlisted force	e1.158	3%
Amount of overhead charges to be borne by regiment of Inf	\$536,644	41
Amount of overhead charges to be borne by regiment of Cav	527,494	46
Total enlisted men entitled to rations and clothing		
Percentage for regiment of Infantry		
Percentage from regiment of Cavalry		
		_
Total subsistence	\$9,033,579	40

Total Clothing	\$4,901,271	67
Subsistence for regiment of Infantry		
Clothing for regiment of Infantry		19
Subsistence for regiment of cavalry	92,052	
Clothing for regiment of Cavalry.		
Small Arms firing, enlisted men, regiment of Infantry		
Small Arms firing, officers, regiment of Infantry		
Small Arms firing, enlisted men, regiment of Cavalry		
Small Arms firing, officers, regiment of Cavalry		
Small Arms enlisted men, regiment of Infantry		-
Band revolvers, regiment of Infantry		
Cost per year, average life 6 years (small arms)		
Cost per year, average life 6 years (revolvers)	,	13
Arms, enlisted men, regiment of Cavalry		
Band revolvers		
Cost per year, average life 6 years (arms)		
Cost per year, average life 6 years (revolvers)		13
144 Revolvers issued to companies of regiment of Infantry,	04	10
average life, 6 years, cost per year	278	40
Equipment, average cost per year, regiment of Infantry		
Equipment, average cost per year, regiment of Imanty		
Forage, including officer's horses, for regiment of Cavarry		
Forage, including officer's horses, for regiment of Thiantry		
(Exact figures on forage not available but above estimate made		00
from actual cost of forage at an average post.)		
A Cavalry Regiment has 12 more stables than an Infantry reg-		
iment, the estimated depreciation, repairs and light		
per stable is	650	00
Difference in yearly cost in stabling a Cavalry regiment	7,800	-
Horse-shoes, nails, etc., for regiment of Infantry (including	1,000	00
	94	en
mounted officers)	34	00
officers)	1 901	90
Appropriation for horses for the year 1912	1,801 517,165	
	311,100	90
Total cavalry horses 11,760		
Total infantry horses 870		
Total artillery horses saddle		
draft 4,004		
Since artillery draft horses cost about 1/4 more than sad-		
dle horses, they may be assumed as having a total		
of horses	10.5	0.5
Grand total	. 19,7	30
Percentage infantry horses 4.3%, per Infantry regiment		
Percentage cavalry horses 60%, per Cavalry regiment 4%		==
Cost of infantry hosres one year, per regiment		
Cost of cavalry horses one year, per regiment	20,686	02

REGIMENT OF INFAM	NTRY.		1
Overhead charges\$	536,644	41	(
Pay	317,860	56	F
Subsistence	93,678	22	S
Clothing	50,826	19	(
Small arms firing	10,551	00	S
Arms	2,911	59	A
Equipment	6,710	68	E
Total\$	1.019,182	65	
Forage	4,996	60	F
Stables (difference)			S
Horses	739	55	H
Horse-shoes, etc		60	H
Total \$	1.025.013	40	

REGIMENT OF CAVAL	RY.	
Overhead charges\$	527,494	46
Pay	331,460	05
Subsistence	92,052	17
Clothing	47,943	56
Small arms firing	12,321	14
Arms	4,363	09
Equipment	16,191	
Total\$1	,031,826	
Forage	95,167	80
Stables (difference)	7,800	00
Horses	20,686	62
Horse-shoes, etc	1,801	
Total\$1	,157,282	

Ratio of cost of Infantry regiment for one year in time of peace to cost of Cavalry regiment for the same period, is as 1 is to 1.129 or approximately as 1 is to 1.18.

This plainly shows that the wisest place to exercise economy is in reduction of the overhead charges and not in a reduction of the number of enlisted men in the army.

One of the great difficulties our country would have in time of war would be that of procuring suitable mounts. The supply of suitable mounts in our country is growing less each year. The breeding of such animals can be promoted only by having a demand for them in time of peace. Such a demand can be stimulated by keeping a strong mounted force in our army in time of peace, and as shown above the difference in cost between keeping mounted and dismounted troops is very small indeed.

MORE CAVALRY INSTEAD OF LESS.

It is unnecessary to state that our cavalry officers were much exercised over the Hay amendment to the army appropriation bill which reduces our cavalry regiments by five. Such a proposition has never been thoroughly discussed in or out of Congress, *especially by the Military Committee of the House which usually and properly takes testimony regarding the wisdom of making any great change in army organization.

We are receiving from all over the country clippings from various periodicals which are combatting this legislative action, extracts from which are reproduced herewith below. These, together with other contributed editorials appearing in this number of the CAVALRY JOURNAL are given for the information of our cavalry officers and the service at large.

There are hundreds of arguments, legitimate and sound arguments, in favor of an increase of our cavalry and no good reason why there should be a reduction in that branch of the service, and it is hoped that our members will, in case they have any ideas not advanced in these several editorials, not hesitate to send them along to the Secretary for the information of the cavalry arm.

The following are some of the extracts mentioned, the omitted parts being those where the same arguments are repeated:

From the Kansas City Times:

"You've seen twenty-two steaming and mud-begrimed men, selected for their physical fitness and self-control and developed by long, hard training, struggling for an inch on the football field. Of the twenty-two only two, who happened to be in command, are permitted by the rules to express themselves in words.

"And surrounding the noble twenty-two, in comfortable ulsters and furs, are twenty-two thousand persons who have paid \$2.00 each to be there. Before the game is half over every one of the twenty-two thousand can—and does—point out errors, or error, on the part of some one or all of the twenty-two experts engaged in making ruts with their faces. The \$2.00 ticket of admission included the privilege of commenting freely and openly, favorably or unfavorably, giving advice and pointing out blunders in organization, discipline and general conduct, regardless of the fact that many of the twenty-two thousand had never seen a game before, had never seen a book of rules and couldn't keep score.

"In the American Army there are about ninety thousand trained men who ought to know something about their business. On the side lines there are ninety million free-born citizens, each with the God-given privilege to tell the soldier just where he is wrong and why. About once every two years the ninety million avail themselves of their right through Congress and an 'Army Reorganization' Bill is born. This session, the House, in its army 'reorganization,' reduces the cavalry branch from fifteen regiments to ten. It was 'reorganized' from ten regiments to fifteen regiments just after the Spanish War. Now it is to be reorganized back again.

"The advocates of the change say that the cavalry arm is too large in proportion to the rest of the army. That would be true, were our army considered in the light of a field force. In fact, however, it is still the old familiar 'skeleton army' which is to be filled in, or out, when war comes. But you can't create cavalry in a month or ten months. Nearer two years to make cavalry of a lot of untrained men and horses; infantry, naturally, in about half that time.

"So, right now, to one of the ninety million experts in the bleachers, it seems that cavalry is the one arm that should not be cut down; it would take too long to replace it. In case of war these five regiments of cavalry would be needed—not in two years, but at once. They might be needed this year for patrol duty in Mexico.

"Couldn't a better place to economize be found?

"But the greatest good that could come to the American Army—again one of the suggestions of the bleacherites—would be to give it a little rest from never ending reorganization. It leads all the armies of the world in reorganization experience. How would it be to let the army alone for a few minutes at a time and see what would happen? In other words (more advice from the bleachers), why not let the responsibility of the army rest on the army, just as an experiment?"

From the Burlington (Vt.) Free Press:

"The whole country should view with alarm the amendment that has been added to the army appropriation bill by which it is proposed to reduce the strength of the cavalry by five regiments. The bill has already passed the House and although it probably will not pass the Senate, it is a matter that should not be allowed to pass by without a strong disapproval from the country.

"The United States Cavalry Association has taken the matter up and we believe that it is our duty as citizens to try and instill into our people some idea of what the safety of our country will demand in time of war in the matter of cavalry organization.

"Facts are overwhelming in favor of more cavalry instead of less and it is the duty of all who know this to point it out to the country. All the data that can be collected shows plainly that in any real war that may come our present cavalry is at least one hundred per cent. below the amount that will be immediately required.

"The only cavalry that we need consider is that which is trained and ready at the very beginning, the regular cavalry. Modern war is too short and decisive to give any time for organizing and training cavalry. It is in the infantry alone in which our militia and volunteers can be effective.

"We all know that our shamefully small regular army will form hardly a nucleus of the army that would be at once necessary for war even with much berated Mexico.

"If we were called upon to go into Mexico it would require more than all the cavalry we have in the United States. The work of rounding up the scattered enemy would fall almost entirely upon the cavalry. The two recent disturbances there show that a hard campaign in Mexico is an ever present possibility.

"We have then right on our border a situation that may at any moment demand more cavalry than we can obtain. The necessity of a large cavalry force in a war with any firstclass power of course would be imperative and immediate and all the peace societies that the world will ever see can not give the least assurance that such a war will not at any moment be thrust upon us. "We are no longer a nation of riders. Our people use the electric car and the automobile. Riders and horsemen in our country, except for a handful on some ranches in the west, do not exist.

"Yet when war suddenly comes we shall need the cavalry first and immediately. It is the cavalry that is the first line of the army. The Boers in South Africa held England at a standstill for nearly a year until General French's cavalry arrived and took the field.

"We have at the present time in the United States eleven regiments of cavalry, 8,580 men, (four regiments being on foreign service). This is all of our cavalry that is available, mounted and ready to launch against the enemy should he come tomorrow.

"Japan, if she should attack us would send 14,000 cavalry with her first landing party. Germany would send 28,000 cavalry with the first expedition and could quickly follow it with more

"Our other possible enemies could land between these two amounts of cavalry with their first expedition.

"Should we reduce our cavalry to five regiments, we would have left six regiments in the United States 4,680 men. Mexico has 7,318 men in its regular cavalry.

"Inasmuch as our military policy, if we have one, is to consider our regular army as only a nucleus, for the large army that will be at once necessary to raise in time of war, it behooves us to keep the strength of our cavalry and artillery on the fighting basis that is required for war, and to trust to the militia and volunteers only for infantry.

"Count Von Wrangel says: 'Improvisation is nowhere so useless as in the cavalry arm. This arm must be exactly equipped in peace as one expects to use it in war."

From the Washington Post:

"The unsound policy that would sap the foundations of government and business in order to justify a gratuity of \$75,000,000 voted to those whose names were transferred from the Army roll to the pension roll fifty years ago has got around to the Army. Having already sought to dim our luster

as a sea power, our land power is now being shorn for campaign purposes by the power-seeking politicians. They strike at the vitals of their quarry unerringly. They could have done the fleet no greater disservice than to abandon the battleship program. They could not have lessened the efficiency of the undersized army to a greater extent than by cutting the cavalry down a third. They could not have hit upon a more inauspicious time for such a step than the present, when the patrolling of 2,000 miles of border for an indefinite period makes a heavy call on the mounted service.

"Could there have been found a flimsier pretext than the fact that the British Army has a smaller percentage of cavalry than ours? Great Britain, with an area less than half of that of Texas and a population less than half of that of the United States, finds employment for more cavalry than we have, with our 4,000,000 miles of area all told, and 5,000 miles of border. There is no comparison, no point of similarity, between the two countries, and he who seeks to bolster up a weak cause by drawing such a parallel is reduced to an extremity that puts him in a ludicrous light. The proposition is as amusing as the plea that it is right and proper to cripple the Treasury in order to benefit consumers in the Eastern States."

From the Washington Star:

"In view of the experience of the United States at the time of the Spanish-American War, and especially in view of the happenings of a year ago on the Mexican border, it seems incredible that there should be a disposition in Congress to reduce the regular army to any exent. And yet this is the present tendency in the House of Representatives, where the army appropriation bill is now under discussion. Amendments have already been adopted indicating that the House will seriously disarrange the organization. It is possible, of course, that the present system is not the most effective. That is a matter of expert judgment and cannot be most satisfactorily considered in connection with the pursuit of a policy of mere money saving. There is no popular disposition to question the wisdom of maintaining a standing army of sufficent size to cope with conceivable emergencies. Nor, on the other hand, is there desire

for an army big enough to protect the United States in the case of a foreign invasion by a large power. Reliance must be had at all times upon the citizen soldiery, the effective organization of which constitutes the first reserve, with ultimate dependence upon the unorganized mass of people. But even with the most effective militia organization, the army must be maintained at sufficient numbers to supply the necessary structural formation for a military campaign. The whole question as it stands in the House is unfortunately one of cutting off expense and not keeping up the military force to the top notch of efficiency and reliability. Against the views advanced in support of the curtailing amendments are opposed the opinions of the most eminent military authorities of this country. The Senate will be relied upon, in case the bill passes the House in the shape that is now indicated, to prevent the contracting, weakening policy from being carried into effect."

From the New York Times:

"The essence of cavalry is its mobility. Without its horses and the full knowledge of how to use them, cavalry foses its strength, and in exact proportion as its mobility is impaired its entire usefulness is reduced. Those men who are mounted on raw, untrained horses become a drag on their comrades who are mounted on trained horses and reduce them to their own level of inefficiency.

"Take Squadron 'C' of Brooklyn as a criterion. The state appropriates \$1,200 a year more for the maintenance of each of its four troops than it appropriates for an infantry company, and yet the squadron must engage in a large business enterprise to provide about one-half the number of horses required to fully mount it at its peace strength, one-third the number needed to put it on a war footing.

"The state appropriation for the maintenance of this squardon is \$7,800 a year. In order to keep up the 140 horses that are the property of the squadron it has to earn \$32,000 a year in addition. The squadron costs, aside from the upkeep of its armory, \$40,000 a year, and to earn this it must virtually engage in the livery business on a large sacle.

"Your cavalry is probably the most efficient of all the National Guard cavalry, and yet because of its shortage of horses it can hardly be said to be more than fifty per cent. as efficient as it would be if fully mounted on suitable horses. Nor can this deficiency be supplied in less than from three months to one year, with the latter period the more nearly correct one.

"New Hampshire has one troop, located at Peterboro. It has no horses, no drill hall. Its members ride only seven days in the year. It has not even an armory floor large enough for the troop to form on in line. It has men and a good spirit, but is no more entitled to be called a troop of cavalry than any body of well-meaning young men who organized with the intention later on of learning to ride when some one gave them horses.

"Massachusetts has two brigades of good National Guard infantry. It has four troops of cavalry, so called. None of these troops has horses; there is no armory for them to ride in. One troop is quartered in a seven-room apartment, where no single room is large enough to seat a single squad for theoretical instruction. Another troop is quartered in a loft over a garage, with no accommodations worthy of the name. Neither of the other two troops has an armory large enough to form line in. The state of Massachusetts appropriates \$10 a man a year for hire of horses for instruction purposes!

"And yet, with all this handicap, there is included in the personnel of this squadron as fine a body of young men as can be found in any organization, social or military, in the United States, held together by the hope that some day their State or the Nation may supply the horses and forage, that they may learn to become cavalry.

"In Rhode Island there are three troops. Again there are no horses, no drill hall, very little money, and at present very low efficiency, because of the lack of horses and an opportunity to learn to ride—to master the very heart of their profession. The fine young men composing these troops are hoping, almost against hope, for better days. One troop discouraged by its utter lack of facilities, is struggling in the

throes of dissolution. Perhaps it may revive, but until horses and a place to ride are provided there is small hope for it.

"In Connecticut we find in New Haven a troop, owning thirty-four horses—fairly good ones. This comes the nearest to being a troop of cavalry of any of those enumerated. In fact, its members know where to put their hands on enough more horses to mount it in a very few hours.

"The other Connecticut troop is in Hartford. It has a splendid personnel, but, as it is not a year old yet, it has not horses or drill hall. But the members are resourceful young men and will soon supply this deficiency. There is much to

hope for here.

"The whole idea of giving you the above data is to show the futility of expecting the State to maintain cavalry in a state of instant readiness. If New York and New England, with great wealth and high patriotic impulses, cannot do it, what States can hope to do it?

From the Washington Star:

At the annual banquet of the Department of the Potomac, Grand Army of the Republic, last evening at the Arlington Hotel, President Taft, speaking to more than 200 veterans of the war between the states, made a plea against the reduction of the number of cavalry regiments in the regular army. Coming from the foremost advocate among the world's rulers of universal peace and international arbitration, the address of the President was regarded as particularly significant. He said:

"You are a part of the great army that saved the republic. You are an evidence that in the past, at least, though a republic we have not been able to live without war. You are not in love with war. You know what it is. You understand the awful consequences in its immediate happening, the dreadful consequences that follow for years, even after it comes to an end, and I never rise before a body of Grand Army men that I don't know that I find in their hearts a response to every effort that is made for future peace.

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Age Years						Rate \$1,0	
21	-	-		_		\$13	61
31	-		-		-	17	58
41	-	-		-		23	88

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Owing to construction and functions, it is absolutely impossible for the horse to put his tongue between the bars of the BIT, or take it in his teeth.



The BEST all around Bit on the market. Has all the good points of the Bit you are now using with additional features. Insures absolute safety to the Rider or Driver by giving perfect control at all times, and in any emergency. Never becomes displaced in the mouth. No head pressure. No torture, no chafing, no callous formation.

Makes this Bit the Most Perfect and Practical for Riding, Driving, Hunting, Polo Playing, Cavalry and Mounted Police.

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Gream of Tartar
NoAlum, No Lime Phosphate



"War is an awful thing to contemplate, and I have no doubt that you, who look back to the real blood, to the cruelties and to the awful sorrows that were in war, can testify that it is not something to wish for, but something to avoid at all honorable hazzards. And yet, my friends, much as we desire peace, much as we hope that we may be able to devise in the near future some means of assuring all the nations that are armed to the teeth a method of settling international controversies other than by war, we know that, being charged with the responsibility of defending the integrity of our nation, we must continue to be prepared until we reach the time when only peace is possible.

"Therefore we ought to look with the gravest concern and with a great deal of caution upon any proposition to reduce the army and the navy so as to make them less useful for the defense of our country and for the carrying on of those duties that we as a world power have assumed in the last decade. It does not make any difference whether we ought to have assumed them—upon that question I would like to be heard before it is decided—we have assumed them, and to say that that one soldier in a thousand of our population is too great for us to support is to say that we are not a nation willing to meet our responsibilities.

"One soldier in a thousand is not, under the hand of the most tyrannical and despotic and ambitious executive, going to subject our people to any particular danger. But if five regiments of cavalry are taken away from the fifteen we now have it may be that it will prevent our discharging, in the effective way we ought, our duties as a nation. This should not be undertaken until it is ascertained certainly that we can perform those obligations that we have to our people and those peoples for whom we have assumed obligation and protection and still part with that force.

"Now I come here with a great deal of pleasure to appeal to this body of men who don't desire men in the army just for the purpose of show—that they have had all that in their early youth, and they are above it. They don't want an army, except for actual use—to discharge the duties that the nation ought to discharge. I believe we are going to get those treaties

ratified, and I know I have your assistance in trying to do so. I do think it is proper to invite your attention. as men who know, as men skilled in the actual defense of the country, and to arouse your interest in the question whether we ought to reduce the mobile army, small as it is, for this country, and run the risk merely for the purpose of reducing our expenses. I don't believe you agree with that, and I thank you for your sympathy in that regard.

The following has been furnished as being pertinent to this subject.

"I am sending a few notes taken from Wrangel's 'Cavalry in the Russo-Japanese War,' which may be desirable for the IOURNAL.

"I would also call your attention to the article in the Army and Navy Journal, of January 27, 1912, signed 'National Defense,' the main purpose of which appears to be to advocate that the Federal Government should assist in organizing more militia cavalry. This is a strong argument in favor of the idea that we have not now sufficient cavalry for use in any war of the size that will be required in a real war.

"To spend our money on militia cavalry is worse than useless. Our infantry claims that the militia infantry falls far short of the requirements as regards training for war. If this is so, you can multiply the deficiency by ten when it comes to considering the militia cavalry. In these days of short and decisive wars, the war will be over and defeat be ours before we can even make a start at training volunteer cavalry. The only real effective cavalry that we will have for such a war will be that of the regular service."

From Wrangel's "Cavalry in the Russo-Japanese War."

"Improvisation is nowhere so useless as in the cavalry arm. This arm must be exactly equipped in peace as one expects to use it in war.

"Our conviction that a strong cavalry, now as formerly, forms an absolutely necessary fighting force for every modern

army is supported by a powerful ally. According to the latest reports, it is the intention of the leaders of the Japanese Army to form not less than eight divisions of cavalry in the course of the impending reorganization of their army. This means a doubling of the cavalry force which was hitherto available.

"The creation of a strong and modern cavalry arm presents, by the further increase of the Japanese forces, the first and most difficult problem. Under all circumstances a solution must be found. The experiences of the battle of Mukden alone prove this to be essential. There was only wanted a few cavalry divisions to gather completely ripe fruits, which the infantry tired to death, were unable to reap. A peace such as the Japanese nation wished and deserved would have been, probably, the result of an energetic cavalry pursuit."

A RESOLUTION.

Adopted by the Washington Branch of the U. S. Cavalry Association, held in the City of Washington, 24 February, 1912.

"1. Whereas, from time to time during the past year articles have appeared in the public press purporting to represent the views of the best cavalry officers and claiming that the present organization of the cavalry arm is antiquated and archaic, and that the proper organization is one involving a fewer number of troops per regiment, and

"2. Whereas, it being the opinion of a large majority of the members of this Branch Association that it has not been demonstrated that such an organization of a fewer number of troops per regiment is an improvement over our present organization, and

"3. Whereas, the agitation for the reorganization or increase of any arm or branch of the service, except as part of a general plan for improving the efficiency of the whole military establishment, is believed to be untimely and injurious, and

as the present agitation for the reorganization of the cavalry is believed to be one of the causes of the attempts to reduce that arm, now, therefore,

"BE IT RESOLVED, by the Washington Branch of the United States Cavalry Association that it be made a matter of record that this Association is strongly opposed to the reorganization of the cavalry except as a part of a general plan for securing a proper organization for the entire military establishment."

The above preambles and resolution were considered by the Fort Leavenworth Branch of the U. S. Cavalry Association, as well as by other officers temporarily on duty at that station, and was fully concurred in by them, there being but two votes in the negative.

EDITOR.

BRANCH ASSOCIATIONS.

Probably at no time in the history of our Association has there been seen the importance of having a well organized Branch Cavalry Association at every cavalry garrison than the present when there is so much to be done in attempting to head-off the proposition to do away with five of our cavalry regiments. If there was ever a need of a Cavalry Association with live Branches that could and should handle such matters as has arisen in this emergency, now is the time. It has always been the opinion of our more progressive officers that our Associations, if properly managed in conjunction with energetic Branch Associations, could be a power in shaping opinions upon the many questions that arise regarding the cavalry service, its organization, equipment, tactics, etc.,

Now, that there is so much to be done and in so short a time, the few Branch Associations that have been formed recently are of immense help in carrying on the work of the educational crusade upon which we have entered and if there were more of them, one in every cavalry garrison, this work would be much simplified and there would be a great saving of time and money.

In this emergency that has arisen, the Executive Committee has not hesitated to use the money of the Association in preparing and sending out printed matter where it will be of use, but particularly in sending to every cavalry officer hastily prepared data for their use as ammunition in this campaign. This work would have been much less and at less expense if it could have been handled through the local Branch Association.

Such Branch Associations have been formed recently at West Point, Washington, Fort D. A. Russell, Fort Ethan Allen and Fort Oglethorpe, and it is to be hoped that the good work will be taken up at all the other cavalry posts.

AN APOLOGY.

Ever since the receipt of the startling news of the proposed amendment to the army appropriation bill, reducing the number of cavalry regiments in our service, little has been done in the office of the Cavalry Journal but prepare and send out literature on this most important subject, together with preparation of the foregoing editorials. As is natural, our cavalry officers are much agitated about this proposition and all are striving in every legitimate way possible to head off this attempted legislation which is so out of place on an approriation bill.

However, this is but preliminary to announcing that, owing to the above mentioned work of preparing and sending out educational matter relating to this amendment, two impotrant items are being left out of this munber of the Journal.

The first is that of the annual report of the Secretary and Treasurer of the U. S. Cavalry Association and the account of the proceedings of the last annual meeting of the Association.

The second is a report of the award for the best horse in the Charger Class at the Virginia and Marlyand Horse Shows for the year 1911, together with cuts showing the winner and other competitors, and also the pedigree of the horse that won the most blue ribbons at those shows.

THE AMERICAN RED CROSS.

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately \$9,000, divided into nine prizes, one of 6,000 rubles, approximately \$3,000; two of 3,000 rubles each, and six of 1,000 rubles each.

The subjects of this competition are as follows:

- 1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
 - 2. Portable (surgeons') washstands, for use in the field.
- 3. The best method of packing dressings for use at first aid and dressing stations.
 - 4. Wheeled stretchers.
 - 5. Transport of stretchers on mule back.
 - 6. Easily folding portable stretchers.
- 7. Transport of the wounded between warships and hospital ships, and the coast.
- 8. The best method of heating railway cars by a system independent of steam from the locomotive.
- The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts; the first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any article having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventative measures in campaign. Such articles will be classified as follows:

- 1. Apparatus for furnishing good water in the field.
- 2. Field apparatus for the disposal of wastes.
- 3. Shelter such as portable huts, tents and the like, for hospital purposes.
- 4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

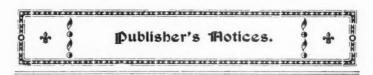
As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the Chairman, Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore, the last mentioned section of the Exhibition should make an appeal to them.





THE SAFETY-HYGIENIC BIT CO.

The following testimonial from Captain M. C. Grimsgaard, author of "The Handbook for Riders," will be of interest to those horsemen who are familiar with this bit: Capt. Giov. Ciammaichella, 309 Broadway, New York City.

My Dear Captain:—I have found that on American trained horses your bit offers the most important purpose of the reins—that of giving the horse just the "proper" support on the bit, a point rarely to be attained with the American schooled saddle horse.

The arrangement of your bit, "when properly handled," i. e., in accordance with the instruction of your circular, makes it possible to have the horse so in hand that even under different circumstances the same yielding to the tensions upon the reins and the same support on the bit can be attained—no matter what may be the nature of the animal's mouth.

I find also that the last bit which you sent me, is of superior workmanship to the first bits you put on the market.

Congratulating you on the improvements, I beg to remain, Yours very truly,

> M. C. GRIMSGAARD, K. W. O., G. M. H. S. S. Captain, Royal Norwegian Cavalry.

N. B.—Captain M. C. Gsimsgaard is one of the foremost riding masters of this country and Europe, is author of the interesting "Handbook for Riders" and was an exhibitor and contestant in the International event for officers at the National Horse Show, held at the Madison Square Garden, November, 1910.

THE UNDERWOOD TYPEWRITER CO.

An order just secured by the Underwood Typewriter Company from the Western Union Telegraph Co., for 10,000 Underwood machines is the largest purchase of its kind in business history and breaks all records.

The innovation of day and night letter service, at reduced prices, and the great increase in business in consequence, made necessary the inauguration of more progressive methods in the transcription of all messages received over Western Union wires.

The proposition of purchasing the machines was put up to a committee some months ago. This committee took into consideration, not only the necessity for the purchase of type-writers, but the practical and mechanical merits of all machines. The result was a report to the company in favor of the purchase and the adoption of the machine just ordered. Within a year every telegram, and particulary the day and night lettergrams received over the Western Union wires, will be typewritten. When the method is fully in force it is expected that a vast improvement will be apparent.

The machines are to be delivered from Hartford, the home of the Underwood, to the various telegraph offices. The purchase because of its importance and size, has caused sensation in typewriter circles and great gratification on the part of the army of operators who are handling the telegrams of the world

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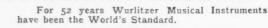


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